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TREATMENT OF TYPHOID FEVER.*

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Typhoid fever is an acute infectious fever, caused by a specific microbe—the bacillus typhosus. It is a filth disease and a so-called water-borne infection. The bacterium gains access to the body, in the great majority of cases, through the ingesta. Water is the usual carrier. Contaminated milk or other food, and dust laden with the bacillus, either inhaled or swallowed, are sources of the infection. Upon the local and state boards of health devolves the question of the manner of typhoid contamination of water and food and the measures which may correct the evil. Upon the practitioner, however, falls a responsibility which is very important in respect to prophylaxis.

The bacillus finds egress from the body of the patient chiefly by the feces and the urine. The infected excreta may contaminate all objects and materials with which they come in contact. The soiled person and clothing of the patient and the bed may directly infect the sick-room attendants, the laundress and others, if proper cleanliness of the person of the patient and of the hands of the attendants is not thoroughly carried out. Therefore, the feces and the urine should be properly disinfected in every case. A 10 per cent. solution of formaldehyde, a good preparation of chlorinated lime, a 5 per cent. solution of carbolic acid, boiling water, and sulphate of iron may be successfully used. Soiled clothing should be placed to soak in a strong solution of carbolic acid. Personal cleanliness of the patient and of the attendant should be maintained by frequent bathing of the body and the hands. Further, suspicious water and milk should be sterilized by boiling before use. Flies are now known to be carriers of typhoid and other contagions, so that all food exposed to possible infection by these pests should be thoroughly cooked. After the recovery of the patient, the mattress, the blankets, etc., should be thoroughly aired in the rays of the sun and, if soiled, should be disinfected by steam heat. The bed should be washed with hot water and soap.

The production of artificial immunity from typhoid fever as a prophylactic measure, by inoculation with typhoid cultures, or with typhoid serum, has been practiced on man and animals with apparent success.

Pfeiffer and Kolle[1] asserted that they immunized man and animals against typhoid fever by a twenty-four-hour-old agar culture of typhoid bacilli, of which 0.002 gram was mixed with 1 c.c. of bouillon, and used subcutaneously. This was followed in man by a transient rise of temperature to 38.5 C., with moderate headache and loss of appetite. In ten days the blood showed the agglutinative and solvent action on typhoid bacilli. The statement was made that the toxin exists in the bodies of the dead and living bacteria.

Pfeiffer and Marx[2] made experiments on the principle followed by Pfeiffer and Kolle. For immunizing men they used 0.002 mg. of dead eighteen-hour agar cultures of typhoid. Reaction occurred quickly, with a slight rise of temperature, headache and insomnia. After ten days the serum of the blood showed a solvent action on the typhoid bacteria. In animals so treated, the serum of the blood became protective to other animals. Pfeiffer and Marx inoculated three servants in the hospital. Reaction occurred at once with temperature of 38 C., malaise, etc. Local swelling, pain and redness occurred at the point of inoculation, but disappeared in twenty-four hours. After ten days the serum caused agglutination of typhoid organisms in dilutions of 1 to 5, and 1 to 10.

Brieger, Kitasato and Wasserman[3] grew typhoid bacilli in thymus bouillon for three days. What they term an antitoxic body in the thymus cells reduced the virulence of the typhoid poison, so that in the subsequent heating to 60 C. for fifteen minutes, the thymus culture was attenuated sufficiently to make its use safe in man, and, at the same time, sufficiently protective.

On October 26, they injected six mice with 0.5 c.c. of thymus typhoid bouillon, heated for fifteen minutes at 60 C. The animals presented no signs of illness, and November 7 the six protected mice and three other control animals were inoculated in the peritoneal cavity with 0.3 c.c. of most virulent typhoid bouillon. The three control animals died in fourteen hours. The protected animals all survived without signs of illness.

Chantemesse[4] found the toxin in the bodies of typhoid bacteria and not ordinarily in the liquid part of the culture. He succeeded in securing a soluble toxin by special culture-media, and states that animals reacted differently. A guinea-pig is very susceptible; a rabbit more resistant. The horse is susceptible in varying degree. Horses injected every one to two weeks, for two or three years, usually showed a marked reaction to each inoculation and did not become immune. One horse became immune after two years of repeated injections, during which time six liters of the typhoid toxin were used. Guinea-pigs given 1/50 c.c. of the antitoxic serum of this horse survived fatal doses of toxin; when given 1/100 to 1/200 of protective serum, followed by a dose of toxin sufficient to kill in five to six hours, the pigs lived forty-eight and twenty-four hours respectively. He found the same protective influence of the serum in other animals and in man.

In England and British India more extended attempts have been made to immunize man. Wright[5] inoculated 95 of 200 attendants at the Maidstone Asylum. In a succeeding epidemic, 19 of those not inoculated contracted typhoid; none of the protected 95 were ill. Of 8 officers, 6 were inoculated and 2 were not. The 2 not protected had enteric fever; the 6 escaped. Wright also states

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that he inoculated 3000 troops, and that more than one-half escaped typhoid fever.

Duckworth[6] inoculated two men with 1 c. c. of sterilized serum at 9:30 a.m., causing febrile reaction to 100 F., and a pulse of 95 seven hours later. There was headache, impaired appetite and thirst. The point of inoculation became sore, red, and remained tender for forty-eight hours. Ten days later a second inoculation was made in the groin. Locally there was less pain and tenderness than before. Reaction occurred with a temperature of 100.8 F., and a pulse of 80. On the next day the point of inoculation was red and tender, and a gland of the groin was tender and enlarged; urine scant and dark; Ehrlich's reaction absent. On the seventeenth day Widal's reaction was present and vigorous in dilution of 1 to 200.

Wright[7] inoculated 250 soldiers. No statement of the result was made. Fifty-nine about to leave England for India were inoculated by the medical officer. The temperature rose in seven hours, reached 101 F., and returned to normal in twenty-four hours. Local symptoms were severe in two cases. The men were unable to wear belts or to perform duty for four days.[8]

Wright and Semple[9] used a vaccin composed of measured quantities of dead typhoid bacilli which were grown in broth. Eighteen medical officers of the army and of the India medical services were inoculated, and the blood of all afterward gave the Widal reaction.

Wright and Leishman[10] inoculated, with a lysolized typhoid bacillus culture, 2835 soldiers, of whom 27, or 0.95 per cent. afterward contracted the disease, with 5 deaths, or 0.2 per cent. Among 8640 uninoculated men in the same ranks, 213, or 2.5 per cent., were taken with the disease, and 23, or 0.34 per cent., died. Taken as a whole, these statistics would seem to show that a certain measure of protection was conferred by the injections. It is pointed out, moreover, that the inoculated consisted to a large extent of young men who had only recently gone to India; the uninoculated were older and more seasoned, in other words, less susceptible individuals.

These experiments are still too few in number and the results on man too indefinite to allow of positive deductions. Enough has been done to prove the harmlessness of the operation and to encourage a continuance of the practice. Many of the immunizing experiments made on man have been rendered valueless because of the lack of clinical data following the vaccination and the failure to make the Widal test at any time either before or after the inoculation.

The treatment of typhoid fever with serum or with bacterial cultures is the only treatment of the present day which we may call specific. The old so-called specific forms of treatment in the shape of bowel antiseptics, like iodin, carbolic acid, calomel, etc., are no longer considered specific by anyone but the enthusiastic few who still treat typhoid fever and not the patient.

E. Fränkel[11] used sterilized thymus cultures of typhoid bacilli. The first day 0.5 gm. was injected deep in the gluteal region. The second day 1.0 gm. was used, and thereafter every second day. The dose was gradually increased until 4 or 5 gm. were injected. With the second injection reaction usually occurred with a chill and a rise of temperature. On the sixth or eighth day the temperature usually fell to normal. With the fall in temperature the pulse diminished in frequency, the nervous symptoms disappeared and the tongue became clean; the abdomen became less tympanitic, the appetite returned, and convalescence was established. Fränkel treated 57 cases. In all the treatment was beneficial, the course of the disease shortened, and in the cases where the early convalescence was not established, the fever became remittent or intermittent. His method of treatment was used by A. Lambert of New York, in 1895, and by Henshaw of Boston—quoted from J. W. Brennan.[12] Lambert reported 28 cases, of which 10 were treated by Brennan, and the remainder in the service of various New York physicians. Fifteen of the patients showed more or less improvement; 12 did not improve, and 1 died. The ones showing improvement were treated, on the average, five days earlier than those showing no improvement. In 5 treated by Brennan the results were well marked. In 1 the result was striking. The treatment was begun on the eighth day. On the first day 0.5 gm. was given, on the second, 1 gm., on the third 2 gm., on the fourth 4 gm., and on the fifth 5 gm. On the fifth day the temperature fell to normal and the patient convalesced. The patient had a relapse ten days later. The injections caused considerable pain and soreness at the point of inoculation. Henshaw treated 13 patients by the same method; in 8 the result was marked, in 4 the course of the fever was not affected, and 1 died with intestinal hemorrhage. Henshaw made one control experiment with the use of plain sterilized thymus bouillon. There was no appreciable result. The experiment seemed to refute the charge that the good effects of Fränkel's typhoid bouillon were due to the thymus extract.

Rumpf—quoted from Brennan[12]—repeated Fränkel's experiments, but used thymus bouillon cultures of bacillus pyocyaneus, instead of the typhoid bacillus. Of 30 patients so treated, 2 died, 1 of pneumonia, and 1 of intestinal hemorrhage. Von Jaksch, Kraus and others have reported cases treated after the methods of both Fränkel and Rumpf. The results with the blue pus organisms were on the whole not as good as those of Fränkel.

The antitoxin serum treatment has also been reported upon.

Chantemesse[13] used the antitoxin serum obtained from the horse on several typhoid patients. He states that the temperature is modified, nervous symptoms abate, the tongue becomes clean, and convalescence is shortly established. The serum of patients convalescent from typhoid has been used by many observers.

Walger[14] treated four patients. The treatment was begun on the sixth, seventh, sixteenth and eighteenth days of the disease in the four. Ten c.c. of serum from convalescent typhoid patients were given daily in each case. In the two in whom the treatment was begun late, relapses occurred. In all a bad prognosis had been made. All recovered. The effect in all was good. The nervousness disappeared, the temperature fell to normal in Cases 1 and 2 on the second and third day of treatment, respectively. Case 3 ran a prolonged course, but much less severe after the injections were begun. Other observers have had equally good results with the use of blood serum of typhoid convalescents, while still others report less favorable observations, and a few have seen no beneficial effects from the use of convalescent's serum. At present, therefore, the specific treatment of typhoid fever is on trial. The success attained is sufficiently good to give us hope of still better results. For the present we must continue the management which modern medicine has shown to give the best results.

The form of the disease seen to-day in the large cities is milder than that of the first four-fifths of the century. Fewer patients now present the typhoid states and severe intestinal symptoms. In 1881 and 1882, during the

severe epidemic of typhoid fever in Chicago, more than one-half of the cases treated at the Cook County Hospital were of the severe type. During the autumn of that period, a daily average of one hundred or more cases was found in the wards. The mortality rate must also vary with the degree of severity of epidemics. The lessened rate of mortality is due partly to the present milder form of the disease. Mortality statistics, based on any form of drug treatment, have been proved to be misleading. Like all the specific infections, it is self-limited in its course, and recovery will occur in the great majority of cases under all forms of treatment, and in spite of drug treatment.

Death occurs in typhoid fever from: 1. Asthenia, the effect of the specific toxemia, or the result of diarrhea. 2. Intestinal hemorrhage, or intestinal perforation. 3. Intercurrent disease the result of mixed infection by pus cocci, pneumococci, etc.

Asthenia, the result of rapid or slow specific toxemia, is the most frequent cause.

The specific toxemia is the cause of the clinical phenomena, notably fever and the nervous symptoms. The condition of the urine in typhoid fever is a good expression of the toxic condition of the patient's blood. Bouchard has defined the toxic coefficient of the urine, in health and disease, as that fraction of a kilogram of animal tissue which is killed by the injection of the quantity of the twenty-four-hour urine, which is excreted by one kilogram of the animal. The average coefficient of urine toxicity he placed at 0.363.

Roque and Weill[15] experimented with the urine of typhoid fever and arrived at the following conclusions, regarding the urine from a case when the fever ran its course without any treatment whatsoever: 1. The toxicity is much increased, being double that of normal urine. 2. The toxicity is independent of the temperature and remains increased during the entire course of the fever and during convalescence. 3. The presence of albumin has no bearing on the elimination of the toxins. 4. This elimination does not depend on the amount of urine secreted.

The specific poison especially affects the nervous system, and apparently has a profound effect on the vasomotor apparatus. There is a consequent want of tone in the muscular apparatus of the cardiovascular system. This is evinced by the low blood-pressure so frequently observed in the dicrotic pulse of the early stage of the disease. The toxins also produce the degeneration of organs commonly observed in all fevers and formerly wrongly attributed to the high temperature. The latter doubtless does contribute to this change in the organs, but to the toxins primarily must be attributed the fever and the degenerative changes. The management of the treatment must therefore be directed to a modification of the toxemia due to the specific toxins, and also to the toxic products of tissue metabolism which are naturally increased by the febrile condition of the patient. No known drug will shorten the course of the disease. It will run its course in spite of any known treatment, excepting perhaps the specific one already mentioned. Experience has proved that the methods of treatment which have for their object the diminution of the toxemia give the most satisfactory results. This is comprised chiefly under efficient nursing and diet.

I can not do better than quote Professor Osler's[16] opening statement of the treatment of typhoid fever: "Since typhoid fever runs a course uninfluenced by any known medicines, the duty of the physician is to see that the patient is properly nursed and fed, and that dangerous symptoms, should they arise, are combated by appropriate remedies." In hygiene and dietetic measures his attitude is best expressed in the term, "armed expectancy," giving no medicine, simply because the patient has a fever, but, in emergencies, using suitable remedies with promptness and decision. He advocates, as Sydenham said of Hippocrates, "the support of enfeebled and the coercion of outraged nature."

Good nursing is indispensable for the comfort and safety of the patient. Many of the accidents and complications are warded off, or materially lessened, by the watchful and skilful nurse.

The diet in typhoid fever is just now exciting some controversy, especially in reference to the use of solid food. Thus Bushuyev[17] makes a plea for more liberal diet in the disease. His patients were fed on bread, black or white, with crust, rolls, hard or soft boiled eggs, cereal porridge, small amounts of chicken, a small cutlet, or small amount of boiled beef, tea, coffee, soup, gruels, boiled milk, fruit juice, etc. Eighty so fed, during 1895-6, were compared with 74 treated by Dr. Sartsierich, with a diet of milk only. Of the 80, 8 died, 10 per cent., and of the 74, 9 died, or 12.1 per cent. The average number of days spent in the hospital, by the 80, was 42; of the 74, it was 49.2. The better showing was made by the patients on the more liberal diet. From the experience of Bushuyev the appetite of the patients remained better, the stools more normal, and there was less gastric and intestinal disturbance on this diet than on the usual restricted milk diet. He states that intestinal hemorrhage is not more frequent and intestinal perforation less frequent. The emaciation was also less.

Shattuck[18] recommends more liberal but rational feeding: to diet the patient as an individual, not as a case of typhoid fever. On the one hand there are patients with irritable digestive organs, who require the most carefully selected, easily digested food; on the other hand, patients, rational and bright, with clean tongue and good appetite, who take and easily digest a simple mixed diet. Between the two are all grades of those who require a diet modified to suit the individual.

The main principle of diet is to select simple, easily digested food which will leave but little irritating residue in the bowel. The digestive power of the individual is diminished and improper food or overfeeding may result in local disturbance of the digestive organs as well as possible auto-intoxication.

To carry a patient through typhoid fever, not only is good nursing and a proper diet essential, but it is also necessary to mitigate the toxemia and to be constantly on the alert to meet in the mildest cases. The toxemia is best combated with hydrotherapy. The history, the methods of giving, and the effects of the cold-bath treatment are too well-known to be repeated here. That the mortality in hospital practice with the Brand bath has been materially lessened is substantiated by overwhelming data. The method has many advocates and a few enemies. That the method has many friends is due to the manifestly good results generally attained. That it has enemies is due to the fact that, like everything else, it has been used as a treatment for typhoid fever and not for individual human beings. The rule of beginning the bath, in all cases, with the exception of patients with very weak heart, intestinal hemorrhage or perforation, acute nephritis, etc., when the rectal temperature reaches 39 C., and repeating it every three hours, provided the temperature again reaches that degree, to plunge the patient into a bath of 20 C., and keep him there fifteen

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minutes, in spite of the discomfort the bath may give, must arouse antagonism in every humane physician, and especially in him who individualizes in the practice of medicine.

Hydrotherapy, in whatever way aplied, is beneficial in all the fevers. In typhoid fever with a profoundly intoxicated nervous apparatus, and a vasomotor system practically paretic, the increased tone given to the nervous system by the application of cold, or hot and then cold, water with the object of producing nervous shock and secondary reaction is of great benefit. The Brand bath gives the most profound results. The cold pack, cold effusions, cold sponging give less pronounced results. but in many cases quite sufficient for the individual patient. The effects of the Brand bath and of all forms of baths to a lesser degree is to: 1. Lower the bodily temperature in the course of a half hour after the completion of the bath. 2. To increase the blood-pressure, as is evinced by the radial pulse, which becomes smaller and more tense. 3. The headache and other nervous symptoms are relieved. 4. The tongue becomes cleaner, the thirst less, the digestion is improved, and the bowels move more regularly and normally.

What is the meaning of these reactions? Nervous shock and subsequent reaction, associated with the increased tone of the cardiovascular apparatus means increased blood-pressure and consequent improved secretions and excretions. The urotoxic coefficient is increased five or six times that of the normal. (Roque and Weill, *loc. cit.*). The amount of toxins excreted is increased from the time the cold baths are begun, and remains stationary as long as the baths are given. The moment the baths are stopped, the amount of toxins excreted is diminished.

In cases of typhoid fever left to themselves the toxins are in part eliminated during the fever, the toxic coefficient being double the normal. The elimination is, however, incomplete and a hypertoxic urine is often demonstrated four or five weeks after the end of the fever.

In cases treated by the cold baths the elimination of the toxic products is enormous during the active stage of the disease. The hypertoxicity diminishes with the fall of temperature, so that when convalescence is established the elimination of the toxic products is finished and the urotoxic coefficient becomes normal. The cold bath treatment does not prevent the formation of toxins, but expels them as soon as they are formed.

It is interesting to note that of drug antipyretics, with antipyrin the elimination of the toxins is slight, while the drug is taken, the toxic coefficient sometimes falling below the normal, but during convalescence it is enormously increased for a period of about a week. Antipyrin does not act as a true antiseptic; it does not prevent the formation of the toxins, but it does prevent the elimination of them by the urine. The free excretion of the toxic products by the urine, as fast as they are formed, is then probably the explanation of the beneficial effects of the cold bath. Furthermore, the bath is beneficial just in proportion as it excites cardiovascular tone by reaction from the stimulus or shock of cold. Reaction, the necessary condition to obtain the beneficial results of the bath, may be attained more easily by skin friction both during and following the bath. Indeed, the skin friction is just as important as the application of cold. With friction a lesser cold may be applied and even the cold pack, the cold effusion, and the cold sponge, when combined with proper friction of the skin, will be followed with much more beneficial results than if the bath is given with the idea of reducing temperature. Hydrotherapy, and preferably the Brand bath, when applied to individual cases, affords better results than any other form of symptomatic treatment. It seems rational to ascribe the good results to the increased excretion of toxins by the urine, when the bath is properly given. The diminished toxemia explains the improvement in the symptoms. Other methods of treatment are partially successful or beneficial just in proportion to the effects the treatment has upon excretion. Drug antipyretics, cathartics, especially calomel, in large or in small doses, and so-called intestinal antiseptics, have run a more or less unhappy course, and are now practiced by but few thinking men. Diluent drinks and colonic flushings with normal salt solution afford a more rational treatment by improved excretion than all the antipyretic and antiseptic drugs. The preliminary treatment of typhoid fever with a cathartic of calomel, castor-oil, a saline, or any other drug is commendable as a bowel-cleansing process. The use of drugs thereafter is, for the watchful man, one of choice to meet the needs of the hour.

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TREATMENT OF TYPHOID FEVER IN PRIVATE PRACTICE.*

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I shall not attempt an exhaustive exposition of the subject, but shall limit attention to a few questions of fundamental importance and general interest.

Prevention.—This is the question of the hour. The lack of correspondence between theory and practice is nowhere more strongly exemplified than it is in this connection. Theoretically, typhoid fever is preventable, and that without reference to antitoxin inoculations; but in private practice the measures of prevention ordinarily employed are a mockery of science and an insult to the conscience of the profession.

The pathogenic bacilli appear in the discharges of the patient about the ninth or tenth day of the disease or later; and they persist a week or two after defervescence.

In private practice, especially among people in easy circumstances, the patient usually presents himself for treatment before the ninth day is reached; and consequently it is usually within the power of the doctor to prevent the further spread of the infection. His sense of responsibility, however, appears to be limited to the prevention of the immediate spread of the disease among other members of the same family, for he exhibits but little care for the community at large.

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His prophylactic motions usually consist of receiving the discharges of the patient into a bedpan containing a solution of carbolic acid or corrosive sublimate and then, without delay, emptying the loose mixture of disinfectant and fecal matter into the soil pipe. The urine as a possible source of infection is generally overlooked. Such measures are next to worthless.

When a 5 per cent. solution of carbolic acid is intimately mixed with an equal quantity of typhoid fecal matter, it requires about twenty-four hours to disinfect it. A 1-500 solution of corrosive sublimate, acidulated with tartaric or hydrochloric acid, and similarly employed, requires about six hours. A 10 per cent. mixture of good chlorinated lime and water, freshly prepared; or a half-and-half mixture of either hydrochloric or sulphuric acid, and water, and thoroughly diffused through the broken-down fecal matter, is effective in two or three hours.

It follows then that typhoid discharges, including urine, should stand several hours in intimate admixture with the disinfectant before being finally disposed of. A covered, glazed earthenware jar should be used for this purpose, and never an old wooden slop-bucket; and it goes without saying that the fecal matter should be treated in this manner for at least two weeks after the occurrence of defervescence.

The mattress should be thoroughly protected by a rubber sheet, and this should be destroyed when the need of it ceases. Any fecal stain on the linen should receive immediate attention. The soiled spot should be thoroughly treated for six or eight hours on both sides of the fabric, with a 1-500 solution of corrosive sublimate, and after a loose rinsing in water the entire article should be boiled half an hour in a covered boiler. Then it is fit for the laundry.

After each evacuation the person of the patient should be washed with water, and subsequently with a 1-2000 solution of corrosive sublimate. The attendants are to be admonished frequently and forcibly as to the need of scrupulous care in respect to the cleansing of their own hands after waiting on the patient. Soiled articles that are not susceptible of thorough disinfection are to be destroyed. The sick-room is to be stripped of carpet, draperies and all unnecessary furniture; and when the case is ended the room should be fumigated with formalin, and then thoroughly aired, before being turned over to family use.

General Management.—The patient is to be kept, when practicable, in a well-lighted and well-ventilated room as far from the living room and as near to the toilet as possible; and the distinction between day and night is to be maintained throughout the entire course of the disease. The sick-room is not to be a rendezvous. A single bed of woven wire, with a good hair mattress, is the best; and it is to be so placed as to be easily approachable from either side.

A good trained nurse is an invaluable coadjutor. In severe cases, when the circumstances of the patient admit of it, two nurses should be employed—one for the night and one for the day. In any case the nurse should receive a reasonable allotment of time for sleep and for outdoor exercise.

There is no better rule in respect to the discipline of the sick-room than for the physician and nurse to hold official communication exclusively in writing. On the one hand the instructions of the physician should be written out in detail, and every prescription should appear in the record, numbered and dated, to correspond with the number and date on the pharmacist's label; and, on the other hand, the nurse's memoranda are to be equally explicit. At the bottom of each day's record-sheet, footings should show at a glance the number of ounces of milk, water and other ingesta given during the previous twenty-four hours; the number of ounces of urine passed, and the number of alvine dejections; the number of hours of sleep; and the mean temperature, pulse and respiration rate. I know of no better safeguard than this against failure to discover oncoming complications.

Diet.—Milk, which is usually the preferred food and the best, is to be given to the extent of three pints in twenty-four hours—when it is the main support of the patient— or even more freely than this when it is well digested. If curds appear in the stools, the milk may be advantageously diluted with water, or barley water, to any extent, to ensure more perfect digestion; and if, notwithstanding such dilution, curds continue to appear, the quantity of milk should be lessened or artificial aids to digestion should be used. The taste of the milk may be varied from time to time, when such variation is relished by the patient, by the admixture of a little flavoring of vanilla, whisky, rum, and the addition of a little sugar. Raw or boiled milk, hot or cold, koumyss, matzoon or buttermilk; milk mixed with 25 per cent. of Apollinaris water, lemon pop, or ginger ale; milk in the form of oyster soup, may be given up to the digestive capacity of the individual.

Eggs are not as generally given in typhoid fever, I think, as they ought to be. Their administration in the form of egg-nog is objectionable in many instances, for this mixture is trying to the palate by reason of its mawkish sweetness and richness. It is generally more satisfactory to give the ingredients separately. A soft boiled or poached egg may be given every six or twelve hours, and a little ice-cream may be allowed now and then. Clam broth is relished by some, and it is quite unobjectionable. When milk is refused, any well-strained meat soup may be given as a substitute, fortified or not by the addition of the whites of three or four eggs. Broths are usually not well borne when there is diarrhea, and consommé is especially obnoxious under such circumstances.

Albumin water, flavored to suit, is an excellent food, and when difficulty is experienced in maintaining alimentation, farinaceous gruels may be given freely. I am a little uncertain as to the value of the proprietary foods with which we are assailed by canvassers, and for that reason rarely prescribe them. Tea, coffee and cocoa are admissible under ordinary circumstances. Nourishment should usually be given at stated intervals, night and day; but when the patient has difficulty in securing a fair amount of sleep, he is not to be aroused for unimportant reasons.

Water.—The abundant internal use of water is essential to the good management of any case of typhoid fever. It promotes elimination, quiets delirium, subsultus and jactitation and favors sleep. Enough aqueous liquids should be given when possible to cause a daily urinary outflow of at least fifty or sixty ounces. The water may be flavored with fruit juices, when desired—lemon, orange, grape—and in the summer season the patient may be allowed to partake of ripe watermelon in moderation.

Medicines.—Another example of lack of correspondence between theory and practice is seen in respect to the use of medicines in typhoid fever. No intelligent physician will maintain, in the presence of his colleagues, that in ordinary cases of the affection the in-

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ternal administration of medicines is an essential feature of good management; but, in practice, when confronted by such a case, who does not begin at once a vigorous therapeutic bombardment, which he continues till the patient is dead or well? I am far from being a therapeutic nihilist, but as experience accumulates I find in myself an ever-increasing respect for good nursing.

A. Stimulants.—Nearly all systematic writers advocate the giving of whisky in severe cases of typhoid fever, to the extent of from eight to sixteen ounces in twenty-four hours. I have used it and seen it used by others in some hundreds of cases, and with various degrees of freedom—from an ounce to a quart in twenty-four hours; but I have felt an increasing positiveness of conviction, as time went on, that, as ordinarily used, it causes many deaths and few recoveries. In my view the indiscriminate use of alcohol in quantities sometimes that would actually imperil the life of a well man, is as irrational, reprehensible and disastrous as is the indiscriminate use of the coal-tar antipyretics. Men who parade their ignorance of the resources of their art by proclaiming their lack of confidence in medicines generally are often found insanely vigorous in the use of whisky. Alcohol does not promote oxygenation of the blood in health or in disease. It does not increase vascular tonus in health or in disease. It does not exalt the reflex functions of the spinal cord in health or in disease. I do not deny that it may lessen the labor of a weak heart and improve the condition of the circulation by dilating the arterioles. I do not deny that it may, at times, like antipyrin, but with less power, lower temperature, quiet delirium and promote sleep; but when vascular tonus is already nearly gone and hypostatic congestions and deepening cyanosis and relaxation of sphincters and involuntary discharges are taking place; when the heart-beat is feeble and the first sound obscure and the pulse is losing strength as it gains in frequency, and, according to authorities, that is the condition which imperatively calls for alcohol, I have never in one instance seen alcohol improve the condition of the patient; but in many cases I have seen the condition improve and sometimes advance to recovery when the administration of alcohol was stopped, and oxygen, strychnin and carbonate of ammonium given in its stead. While I condemn the routine employment of alcohol, I freely admit that when it is used rationally as an adjunct of the hydriatic treatment it is a remedy of value.

B. Antipyretic Medicines.—The free and sustained use of the coal-tar derivatives undoubtedly increases the duration of typhoid fever, including the number of relapses, and it increases liability to intestinal hemorrhage. The administration of an occasional dose as a palliative may be on the side of sound conservatism, but persistent repression of bodily temperature by means of these agents is, in my view, a dangerous proceeding.

C. Intestinal Antisepsis.—Assume that the average duration of the incubative period is two weeks, and that typhoid bacilli do not appear in the discharges till the disease is nine or ten days old. During the incubative period the ingested bacilli penetrate into the lymphatic structures of the bowels and thence into all parts of the body; so that by the end of the period a sufficient number has accumulated and a sufficient quantity of typhotoxin has been elaborated to cause the clinical picture with which we are acquainted. The ingested bacilli do not multiply in the intestinal contents to any important extent, as was formerly supposed. Multiplication occurs, for the most part, in the tissues; and the organisms do not appear in the discharges in important numbers until they are shed by the disintegrating intestinal lymphatics. The idea that typhoid fever can be aborted by the administration of antiseptics and purgatives is, therefore, another ruined theory. But it by no means follows that intestinal disinfection and drainage are either unscientific in theory or useless in practice. Such a view would be controverted by an overwhelming majority of the physicians of the country.

It is admitted that any good effects produced by medicines of this class must be ascribed to the inhibition of putrefactive processes in the bowel, and, thereby, of secondary intoxications of the blood. It is not claimed that a thousand square inches of mucous membrane with its numerous folds and sulci can be made aseptic; but it is a fact of familiar observation that usually the administration of well-chosen and, so far as we know, harmless antiseptic medicines, especially when coupled with a moderately loose condition of the bowels, has the effect of lessening meteorism and the fetor of the discharges and of improving the condition of the patient in many other respects. I say "usually," for it must be admitted that cases are now and then met with in which this kind of treatment utterly fails to make an appreciably favorable impression. The same statement applies equally well to hydrotherapy and every other therapeutic proceeding. Calomel is perhaps the most eligible purgative, aided at times by a saline. A mixture of aromatic oils, thyme, eucalyptus, cloves, mint and the like, given in small and frequently repeated doses, is generally effective in lessening meteorism, and in producing the other beneficial effects alluded to. Guaiacol and salol, used separately or together, but without the admixture of aromatic oils, are less satisfactory.

Hydrotherapy.—It would be hard to find an enlightened physician who would not admit that the hydriatic treatment of typhoid fever as expounded by Ernst Brand effects a saving of life, in hospital practice amounting to 6 or 7 per cent.; but it would be almost equally hard to find one in this country who, in private practice, habitually employs this treatment or who accepts it when he himself is the patient. I have had it refused again and again in the families of colleagues and by well-informed medical students. While there can be no question as to the practical success of the plan in hospital practice, its acceptability in private practice in this country is certain to be of slow growth.

Two persons are required to administer a bath to a very sick adult; and if the patient be uncommonly heavy and helpless and so sick as to require repetition of the baths every few hours night and day for weeks, the services of four attendants will be required. Such attention can not be commanded by poor people. No person in the world will be attracted to the treatment by seeing it administered, and without knowing the ultimate results; and the physician who presses it upon his people must, indeed, be impelled by a high sense of duty. The laboriousness of it; the upheaval of the household usually occasioned by it; the appeals, protests, commands and pitiful attempts at resistance, of the patient; his shudderings and cyanosis and pinched expression of misery while in the bath and the occasional occurrence of an involuntary discharge; together with the knowledge possessed by relatives, of cases of typhoid fever not treated in this way which eventuated in easy recovery, oppose a formidable resistance to the general adoption of hydrotherapy in private practice, which can be conquered only by the slow process of education. To be sure, there are cases in which the treatment is received kindly and in which its effects are less distress-

ing than those described. On the other hand, when the patient is a pregnant woman, or one who has just aborted or miscarried, the administration of the treatment is unendurably appalling to sympathetic friends.

By far the most convenient arrangement I have ever used is a tub of ordinary shape and full size, set on a low truck with small wheels, and placed two or three feet from the patient's bed. It is kept sufficiently full of water for the purposes of a complete immersion bath. It is not necessary to change the water oftener than once a day unless it be accidentally polluted; and, standing in the sick-room in ordinary weather it maintains about the proper temperature, 65 or 70 F., for immediate use. If it is warmer than this it can be easily cooled. I shall leave to others the description of details, premising that fidelity to every detail is indispensable as a basis of fair criticism.

In the best hospitals in the world in which this treatment is systematically used, the mortality rate of typhoid fever is 7 or 7.5 per cent.; and, in hospitals of like grade in which the treatment is not employed, the mortality rate of the disease is 14 per cent. To be sure, certain hospitals quote a rate of 1 or 2 per cent., based on a small number of cases or on a large number of mild ones; but a private practitioner who has never employed hydrotherapy at all may be able to do the same thing. It is not to be forgotten that the fatality of typhoid fever is extremely variable in different years and in different localities during the same year. During the past seven or eight years the disease has been uncommonly mild; and I doubt very much if the general mortality rate of private practice during this period has reached even the smallest figure named.

If immersion bathing is refused, or impracticable, sponging with very cold water, ice-water, is a fair substitute. Indeed, in my view, efficient sponging is to be preferred in many cases, when the patient is very weak, or pregnant, or has a complicating pneumonia, and the effects of the immersion bath are overwhelming. In severe cases the sponging with ice-water may have to be continued twenty or thirty minutes and be repeated every three or four hours. A rectal temperature of 103 F., or above, is, in this country, usually regarded as the critical point requiring the immersion or the sponge bath. Vigorous rubbing is an important feature of both methods of treatment, in which respect they are much superior to the cold pack.

Perfunctory sponging with tepid water, without reference to effects, is of little consequence apart from maintaining an empty show of activity. An important result of the cold bath is the increased activity of elimination as shown by the increased toxicity of the urine following the bath.

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TREATMENT OF MEDICAL COMPLICATIONS OF TYPHOID FEVER.*

BY GEORGE W. WEBSTER, M.D.

CHICAGO.

In the consideration of any phase of the typhoid fever question, we are confronted by, and must take cognizance of, the following facts: 1, that the disease is a general infection by a germ which circulates freely in the blood and may find lodgment, and cause inflammatory reaction in almost all organs and tissues of the body, and that it possesses pyogenetic properties; 2, that typhoid infection predisposes to the occurrence of secondary infection, especially by the pyogenic organisms, as the streptococcus, staphylococcus, and also by the pneumococcus, the bacterium coli and the bacillus of tuberculosis. Furthermore, there seems to be no uniformity in the use of the term, "complication." Is it to be employed in designating all the unusual manifestations of the affection when due to the typhoid bacillus alone, or only to those complications which follow secondary infection?

I shall, as far as possible, limit my remarks to the medical complications which are now commonly attributed to secondary infection in connection with the circulatory and the respiratory systems. The most important ones in connection with the circulatory organs are endocarditis, pericarditis, myocarditis, arterial and venous thrombosis, embolism, and hemorrhage. While endocarditis and pericarditis are rare, and although they are sometimes caused by the typhoid bacillus, they are more frequently due to secondary infection by the pyogenic organisms. When the result of the blood examination demonstrates this to be the case, or even when it is suspected, the beneficial results of the treatment by means of antistreptococcic serum, together with the fact that it is harmless, would seem to justify a more extended use. It is difficult to formulate general rules for treatment, but we may be safely guided by general principles. In the treatment of acute endocarditis, the most important factor is rest, absolute rest in all that this term implies, physical, mental, sufficient sleep, and reasonable freedom from pain. Such patients should not be permitted to make the slightest exertion, nor should even the head be lifted from the pillow, and no movement or turning or unnecessary disturbance of the patient should be permitted. Food should be given through a glass tube. Even the bedpan may have to be dispensed with and a cloth substituted.

Chilling of the surface must be carefully guarded against, when artificial warmth may be necessary. Occasional hot applications and counter-irritation in the precordial region are of advantage, and Abram's theory of the heart reflex offers a reasonable explanation of its mode of action. Such patients should be kept in bed for at least thirty days after the complete disappearance of the acute disease of which the endocarditis is a complication or sequel. The neglect of this rule very frequently leads to disaster in cases which might otherwise have recovered with only slight leakage.

In the drug treatment, it is as important to know what not to do as to know what drugs to administer. When the heart's action is becoming enfeebled, there is restlessness, some breathlessness, pain and anxiety. There is often a temptation to give digitalis; it should not be given; it is not only useless, but absolutely pernicious and dangerous. This is true not alone of acute endocarditis, but also of myocarditis, the latter being suspected when there is diffuse, feeble impulse and the first sound is greatly weakened or absent. Even in the ordinary weak heart of typhoid fever, where the heart does not respond to its use within twenty-four hours, it should be discontinued. In such cases, where it is being administered, if the arterial pressure becomes high or the heart irregular, or if the beats become interspersed with small ones, its use should be abandoned.

Opium in some form, either morphin or heroin, is the most valuable drug in the treatment of acute endocarditis. The size of the dose will be determined by the degree of restlessness and pain and the amount of

*Read in a Symposium on Typhoid Fever, at a joint meeting of the Chicago Medical Society and the Chicago Society of Internal Medicine, Jan. 31, 1900.

sleep. The same rules apply in myocarditis and pericarditis. The next in order of efficiency and value are strychnia, oxygen, ammonia, caffein, camphor hypodermically in sterilized olive-oil. Nitroglycerin is useful in those cases in which the blood-pressure is too high.

The treatment of the chronic valvular lesions, or pericarditis with large effusions, is not within the scope of this paper's discussion.

In the treatment of thrombosis, the most important point is to know what not to do. Whenever it occurs, the patient should be kept as quiet as possible, and movements that are not absolutely necessary should be interdicted, on account of the danger of embolism. All rubbing unguents or liniments, massage and bandaging are especially harmful and dangerous. If in one of the extremities, it should be covered with guttapercha tissue and this surrounded by a layer of cotton wool, the limb elevated and immobilized. We thus meet the indications. Such a patient should be kept quiet in bed for at least six weeks, in order to guard against the danger of embolism. When the venous pressure is high as the result of lowered arterial pressure, careful support of the heart will get the blood out of the venous into the arterial side of the circulation, and thus lessen the danger and promote the comfort and safety of the patient. The same general rules apply in embolism, whether due to endocarditis or thrombosis.

The chief medical complications of the respiratory system are ulceration of the pharynx and larynx, bronchitis, pleurisy with or without effusion, empyema, gangrene, bronchopneumonia and lobar pneumonia. I will make a brief reference to the last two only. The first general rule is that no matter whether the pneumonia be of the bronchopneumonic type or of the lobar variety, it should be treated essentially as though it were the dominating lesion instead of a complication. The second is that each case must be carefully individualized and treated according to the condition of the patient, and in accordance with certain well-recognized principles. Some cases are mild and require little except careful watching and nursing, with perhaps a little skilful medication. The third point is that, until recently at least, we know nothing of the prophylaxis of the disease and were unacquainted with any curative treatment. It was simply a question of vitality.

The results of Pane in Italy and Antonio Fanoni of New York in the use of Pane's serum lead us to believe that the serum treatment of pneumonia is a distinctly curative measure. Fanoni reports fifteen consecutive cases, all cured. The results of treatment by other varieties of serum in this country are not so encouraging. But aside from this specific medication, we must bear in mind that we are dealing with an acute, short, self-limited disease, in which recovery is a question of vitality, and that as we know of no cure, we are not treating a disease, but a patient with an ailment. This ailment is often severe, frequently fatal in its event, the vitality lowered, resistance taxed to the utmost by pain, want of sleep, extreme toxemia and impoverished blood, high temperature and an overworked, weakened right heart. These furnish the indications for rational treatment. It should be our aim to keep the patient reasonably free from pain, see that he has a sufficient amount of sleep, promote his nutrition and maintain his strength: keep the temperature within due bounds and, above all, support the right heart.

For the relief of pain, hot applications may be used when the temperature is not too high. They relieve the pain and reflexly expand the lung. A wet compress is often all that is necessary. Ice massage is a very potent remedy and the relief is usually prompt and decided. I do not favor the continued application of cold. Opiates should be used with extreme care and in the smallest dose that will give relief.

Rest and sleep may be secured by the use of chloral, chloretone, sulfonal, heroin, or morphin in some cases. Restlessness and delirium are sometimes overcome by hyoscin. A water bag filled with ice-water and placed under the back of the neck will lower temperature, soothe the nervous system and promote rest and sleep. Warm sponging, especially in children, has a very soothing, quieting effect.

The diet should be rather more supporting and nutritious than the ordinary milk diet of typhoid fever.

The question of temperature is a vexed one, a debatable land where opposing views are in rather sharp contrast. There is no consensus of skilled opinion in regard to either the necessity for, or the best means of, lowering the temperature. When it arrives at a degree which in itself is a menace to life or threatens the disintegration of blood-corpuscles, or seriously interferes with rest, then some means should be adopted to lower it within reasonable limits. The ice bag is a powerful means, but should not be continuously applied. The wet pack to the affected side may be sufficient, or it may be applied to the abdomen. Sponging with warm water will often suffice and should be tried before we resort to more heroic measures. The cold-water bag to the back of the neck is efficacious and often sufficient. If obliged to resort to drugs, then preference should be given to phenacetin.

Last in order, but first in importance, is the support of the right heart. Because of the double toxemia, the high temperature, inadequate rest, and the added burden imposed by the increased resistance in the lung, the right heart becomes the vulnerable point, the "open door" through which death most frequently enters. Our first care should be to see that no foods nor drugs should be given which cause vomiting. This is particularly true of digitalis. The act of vomiting causes a very severe strain on the heart. As soon as the right heart begins to flag, then we should, as the necessities of the individual case demand, use strychnia, digitelis within the limits already indicated, ammonia, oxygen, camphor hypodermically in sterilized olive-oil, caffein. I wish to go on record as strongly in favor of the use of oxygen in pneumonia when there is cyanosis, and particularly where the heart is weak.

When the lungs are rapidly filling up and heart failure seems imminent, then there is nothing of such efficiency and potency as a hypodermic injection of ¼ grain of morphin. If the blood-pressure is high, and this is not often the case, nitroglycerin should be administered; if too low, belladonna should be given.

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DISCUSSION ON TYPHOID FEVER.

DR. FRANK S. JOHNSON—The hospital treatment of this disease has at all times furnished the data on which the usual treatment at different periods has been based. The large number of cases aggregated in hospitals gives the best opportunity to judge of the degree of virulence of the disease, and furnishes opportunity to apply therapeutic measures and to judge of their respective merits. Even carefully compiled hospital reports on special plans of management may be deceptive unless parallel series of cases under expectant management in the same year and under otherwise similar conditions can be observed for comparison. The disease presents so many complex problems to the therapeutist that he is led to accept some one

phase as the salient feature and to bend his energies in that direction in combating the disease.

The hospital treatment at the present day may be classed under three general plans: expectant, intestinal antisepsis, and heat reduction. None of these alone is fully adequate. The invariable practice is a blending of two or all of them. The expectant plan is a partial acquiescence in the inevitable. No radical measures are taken to influence the course of the specific disease. Attention is directed entirely to the preservation of the strength of the patient by careful feeding, tonics and stimulants, and to guard him, as far as possible, against intercurrent and complicating disease. Under this treatment the affection probably runs a nearly natural course. In practice, however, purely expectant treatment is seldom followed: measures belonging to more radical plans of treatment have always seemed indicated in occasional cases. The author presented an elaborate array of statistics and the results under different methods of treatment. The data showed a very wide range of results obtained under the expectant plan. The differences were attributed chiefly to the variations in the severity of epidemics, and to the quality of nursing.

The plan of treatment by intestinal antisepsis was the natural deduction following the discovery of the specific cause of the disease. In the selection of an antiseptic several problems present themselves: 1. The antiseptic should be one which will destroy the specific germ together with the associated pathogenic and saprophytic organisms. 2. One which will be locally harmless to the tissues. 3. One which will be non-toxic to the patient.

In the attempt to secure an agent which would fulfil the above indications, a new and hitherto unreckoned pathologic factor presented itself. The infection was not confined to the contents of the alimentary tube, but to the intestinal walls; the lymphatics, the blood, and in fact all the fluids and tissues of the body were infected to a greater or less degree. Still another desideratum was sought for, but so far unsuccessfully, namely, an agent which after absorption and solution in the juices of the body might still have a germicidal or, at least, an inhibitory influence on the typhoid germs and others accidentally present. Intestinal antisepsis only imperfectly limits the quantity of infection. It may be serviceable in checking saprophytic growths in the alimentary canal and preventing complicating intoxications. The plan of treatment has been almost invariably modified by measures to promote the evacuation of infectious and toxic material from the bowels. Statistics of treatment by intestinal antisepsis were given.

Hydrotherapy is perhaps most efficiently carried out by means of the bed or the tub bath. In the usual hospital practice tepid, cool or cold spongings with friction, or the tepid, cool or ice-cold pack is relied on in preference to the bath in all excepting the most urgent cases.

The objects primarily sought by the external application of cold are reduction of body temperature; stimulation of the nervous system; stimulation of respiration; stimulation of circulation. The secondary objects are increase of the exchange of gases, which is estimated to be proportionate to the reduction of temperature; increase in the oxidation of harmful products of tissue destruction and their conversion into less harmful excrementitious matters.

The author gave the results of the hospital treatment by hydrotherapy, as collected from various hospitals both in this country and in Europe.

A few instances of unusual management of the disease are on record in the current literature. Paget reports a series of one hundred cases at Freemantle Hospital in 1897, with no deaths. The treatment consisted in the use of salad oil in large quantities, to which was ascribed a protective effect on the mucous membrane of the bowel.

It is common practice in the majority of institutions to administer alcohol in delirium; when the tongue is brown and dry; when the heart is feeble, and when the pulse is irregular or intermittent. At Maidstone, England, in the epidemic of 1897, 1885 cases were treated, with a mortality of 7.5 per cent. A milk diet was relied on. Boric acid was administered, and whisky is said to have been given as a routine measure in quantities varying from 16 to 20 ounces per diem.

With reference to diet in typhoid fever, it is the almost universal practice to administer only liquid or very soft food. In hospital typhoid-fever dietaries milk is the chief article and is supplemented by meat broths and juices, farinaceous gruels, soft eggs, etc. Articles of diet must occasionally be selected to meet the individual digestive capabilities. The apparent wisdom of adhering to the liquid diet rule is forced on practitioners from time to time by the result of dietetic indiscretion during the height of the fever and in convalescence. A few practitioners have undertaken to disprove the need of the rigid precautions usually observed as regards diet. From the data given by the author of this paper, it would appear that many facts have been firmly established respecting the management of typhoid fever. There is still a broad field for investigation, and many details are as yet under judgment. Confusion in results arises largely from the protean aspects of the disease.

DR. A. H. BURR—In the selection of any therapeutic measure for the relief or cure of any disease, two paramount questions are to be solved: 1. What are the essential indications for treatment in a given disease? 2. What are the physiologic properties of the remedy chosen to meet these indications?

This is the essence of rational medicine. In the absence of any known specific treatment for typhoid fever, these two cardinal propositions must be carefully considered and skilfully co-ordinated, otherwise we must grope about under empiricism. Unfortunately for us, the clearing up of the etiology of typhoid fever has not solved the problem of how to cure it. What, then, are the essential indications in typhoid fever calling for treatment? Virchow, nearly fifty years ago, was the first to declare the fundamental doctrine that fever is a condition of vasomotor paresis. This is pre-eminently so in typhoid intoxication. The improved organic functions; the retarded metabolism; the defective elimination are chiefly the resultants of vasomotor paralysis, or lowered cardiac and vascular tension. Manifestly then the indications call for remedies that can safely and efficiently stimulate the vasomotor system, and support it in its task of tiding the patient through to the establishment of the self-limiting immunity.

What are the physiologic properties of the Brand bath, which make it the quickest, safest and most efficient vasomotor stimulant known? The physiologic properties of the cool bath have been as carefully worked out, and as definitely established by Winternitz of Vienna, the father of scientific hydrotherapy, and verified by other scientists, as have been the physiologic properties of strychnia or belladonna.

To get a clear knowledge of these, three laws of hydriatics must be kept in mind: 1. The brief application of hot or cold water is stimulative. 2. The prolonged application of hot or cold water is sedative. 3. The degree of stimulation or sedation is directly as the temperature varies above or below that of the body.

These are its thermic properties, also the physiology of the cutaneous surface on which the cool water is to act. Let us remember that the skin is the greatest sensory organ of the body. The impact of cold water on the cutaneous nerves instantly sets up a strong reflex stimulation of the respiratory centers. Deep spasmodic inhalations take place at once, which soon settle down to stronger rhythmic action. This at once increases elimination of carbon dioxid and absorption of oxygen.

Let us again remember that the skin is the greatest vesicular organ of the body; that it is capable of containing in its vessels one-third of the entire blood of the body. The impact of cool water briefly applied and repeated over and over again in its effects by the rubbing, instantly stimulates muscular contraction of the capillaries and arterioles, and the reflex speedily causes the heart to respond in a slower, stronger impulse against improved vascular tension. With an improved circulatory pressure of an improved blood, glandular activities are quickened, elimination of toxins is increased many fold, metabolism improved, and naturally temperature, which was only an expression of toxicity, is correspondingly reduced. Where this plan has been carried out faithfully, noted hospital clinicians the world over are a unit in reporting a reduction from a mortality of 18 to 20 under all other plans to a death-rate of only 7 to 8 per cent.

The failure of the profession at large to adopt the cold water treatment as a general routine plan is largely due to a failure to clearly grasp the two primal questions we have already stated, namely, the essential indications for treatment in

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typhoid fever, and the physiologic properties of cool water properly applied to meet these indications. For this state of affairs many of our text-books and teachers of medicine are largely responsible, and to my mind much in error.

Permit me to quote from a few standard works. Dreschfield, who edits the chapter on "Typhoid Fever" in "Allbutt's System of Medicine," says: "Abstraction of heat without much diminution of the production of heat is the safest and best way of reducing the temperature, and the application of cold, especially in the form of the cold bath, best fulfills the requirements." Two errors are manifest: 1, in regard to temperature per se as the important indication to be treated, and 2, in overlooking the physiologic properties of water as a stimulant in the Brand method, and attributing its benefits to its physical property of abstracting heat. In Wood and Fitz's "Practice," this statement is made. "The most important part of the treatment of typhoid fever is that which has to do with the reduction of the temperature."

When shall we have done with this hoary-headed error of combating a temperature symptom instead of the underlying toxemia. It is not pyrexia that ails our typhoid patient, but intoxication, from a general infection. Osler throws a glimmer of light on the subject in his text-book, when he says: "The beneficial action is not so much special and antipyretic as general tonic and roborant." Nowhere do these authors give us the rationale of the cold bath, although esteeming its benefits most highly. Early resort to the bath, to my mind, is just as important in securing the lowest possible death-rate in typhoid fever as the early administration of antitoxin in diphtheria. Temperature alone should not be our guide, but constitutional conditions.

DR. FENTON B. TURCK referred to congestion of the splanchnic vessels, particularly of the mesenterics, and anemia of the extremities, accompanied by more or less asphyxia, the nails of the patients assuming a bluish color due to venous congestion. Large quantities of water in the colon in a patient in whom there is splanchnic congestion with more or less cardiac disturbance are contraindicated. The expulsion of large quantities of water from the bowel produces fatigue and increases atony of the bowel. Dr. Turck then alluded to several experiments which he had carried on to determine the beneficial effects of the alternate use of hot and cold water in the treatment of cases of typhoid fever. The use of a small quantity of cold water—say 300 c.c.—for five minutes does not over-distend the bowels at any time, in his opinion, and immediate stimulation is effected, with slight dilatation of the arterioles. There is likewise stimulation of the sweat-glands, increase of blood-pressure, and equalization of the circulation.

DR. I. N. LOVE, St. Louis, said that the rules which physicians apply in hospital practice can not be applied in private practice. In every case of typhoid fever the physician recognizes the importance of individualization and of treating the victim more than the disease, recognizing the fact that each individual is a law unto himself whether he has typhoid fever or appendicitis. He has unlearned a great deal about this disease, and said that he fully realizes it is a question of good management rather than medication. If he were compelled to limit himself to any one thing in the treatment of this affection, he would use water internally and externally. There are management of cases of typhoid fever, and these were elimination, intestinal drainage, nutrition, and tranquilization. Each point he discussed at some length.

DR. GEORGE W. MCCASKEY, Fort Wayne, Ind., said that elimination is by far the most important thing in the treatment of typhoid fever, and any method which improves, and increases four points of the compass which need to be kept in mind in the elimination tells for the benefit of the patient. *Per contra*, anything like the coal-tar derivatives, which tell against patients, should be damned to perdition in his opinion. He does not think they are justified in the treatment of this disease. Physicians have to face the problem of getting rid of the toxins; they can not prevent their formation, and such measures as will eliminate the toxic products from the body should be employed with vigor. Patients should be adequately nourished. The results from the administration of semisolid food appear to have been so good in many instances that physicians should feel encouraged to feed their typhoid fever patients much more in the future than they have in the past.

DR. JOHN A. ROBISON called attention to a point which he has noticed in the treatment of typhoid fever during the stage of convalescence, and which tends to strengthen the theory of the good effects of solid food. In a number of cases of typhoid fever, after all the acute symptoms had disappeared, and yet patients had a slight rise of temperature every evening, say from 100 to 101 F., and were extremely anxious to partake of food or were hungry, by giving them solid food the temperature immediately dropped to normal. This he explains on the ground that the disease had practically terminated, and that the rise of temperature each day was due to hunger.

CRANIECTOMY FOR EPILEPTIFORM SEIZURES AND GRAVE MENTAL DISTURBANCES FOLLOWING HEAD INJURY WITHOUT APPARENT FRACTURE. WITH REPORT OF A CASE.*

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The following case is reported, partly because it is somewhat unique in the pronounced character of its symptoms, the absence of demonstrable organic lesion, and the promptness and completeness of relief following operative treatment; partly because it illustrates, better perhaps than any description I could give, a rare but important group of morbid phenomena following injury to the cranium; but chiefly for the purpose and with the desire of calling forth an expression of the views and experience of the Fellows of the Academy in regard to this interesting class of head injuries.

C. M., aged 20 years, American, wood carver, single, gave a family history negative as regards any neurotic or other hereditary tendencies. He was well-nourished, not addicted to the use of tobacco or spirituous beverages, had never been sick, never showed any tendency to nervousness, had had no occasion for worry, no overwork, no mental excitement, and up to the time of injury was of a lively and contented disposition. His sexual organs showed nothing abnormal, and he denied a history of masturbation or of seminal losses.

On Monday, March 6, 1899, in jumping from a slowly-moving passenger train, he was thrown violently to the ground and partly stunned. According to his own statement, he braced himself on his hands and in raising his head, was struck over the left parietal bone by the sharp corner of an oil-box. He soon recovered from the immediate effects of the fall and blow and went at once to his work. A small scalp wound over the left parietal region healed rapidly and without surgical attendance. For the next twelve days he continued at work, but found himself troubled with headache, soon associated with dizziness. Work became very fatiguing and was no longer enjoyed. His appetite failed and loss of weight was noticeable. Mentally he became somewhat dejected and irritable. These symptoms became gradually more pronounced, so that on the twelfth day after the injury he was obliged to quit his work.

On the following day, without premonitory symptoms other than those just mentioned, he was suddenly seized with violent muscular spasms, affecting, so far as could be learned, the entire system, and resembling an epileptic convulsion. He was thrown to the ground, re-

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mained seemingly unconscious for a few moments, then began rushing about, striking at whatever came in his way, throwing his hand to the left side of his head and crying: "You shot me." The mental excitement lasted for over an hour, when, for the first time since the injury, he was seen by a physician, Dr. Nutt, of Plymouth, Wis., who subdued him temporarily with hypodermic injections of morphin. The following morning he appeared perfectly well, but during the day the phenomena of the previous day were repeated. The muscular spasm was partly tonic, partly clonic in character, the former predominating, and it was noticed that the rigidity was such as to interfere with respiration to such a degree that asphyxiation seemed imminent, when suddenly the spasms would relax and respiration again become regular. At no time was any frothing at the mouth or injury of the tongue noticed Unconsciousness, though at times complete, was of rather short duration for a true epileptic attack, and soon gave way to the wild delirium mentioned. To control him at such times required the services of two or three strong attendants. The muscular movements did not have the rapid, jerking character usually observed in true epilepsy; they were irregular, the motions of the extremities extensive in range, often giving the impression of being semivoluntary.

The attacks now came on daily, with increasing severity and duration, attack often following attack for hours, with but short intermissions. Their general character remained the same. The accompanying mental disturbances were of variable duration, at times subsiding with the muscular spasm, at others lasting for hours afterward. These attacks occurred daily for a period of over six weeks, and in spite of various lines of treatment, including change of surroundings, kept increasing, both as to severity and duration. Meanwhile the attending physicians made the observation that the spasms could be brought on by pressure on a small area, about one-half inch in diameter, located over the left fissure of Rolando, 1½ to 2 inches from the vertex and an equal distance above the scar of the scalp wound. This area, corresponding to the location of the right arm center, was very sensitive to pressure, and when pressed upon the patient would sink to the ground and immediately go into one of his attacks. At the same time it was noticed that the muscular twitchings always began in the right hand, proceeding thence to the arm, trunk and other extremities. The correspondence between the initial peripheral disturbance and the apparent point of central irritation was therefore a very accurate one.

During my first visit to the patient, April 28, nearly eight weeks after the injury, I was enabled to observe and verify all the conditions just described. Aside from these disturbances there were no abnormalities of either motor, sensory or mental character; the ocular muscles and pupils acted normally; the patellar reflex was, if anything, slightly exaggerated, the functions of the bowel and bladder were normal. All evidence of fracture or depression of the cranial wall was wanting. A small scar was found over the lower portion of the left fissure of Rolando, about 3½ inches below the vertex.

Taking into consideration the history and symptoms as just described, the presence of a gross irritating lesion acting on the left cerebral hemisphere in the region of the right arm center appeared extremely probable. Operative treatment was accordingly advised and received the ready assent of the patient and his family. These were fully advised of the uncertainties both of the pathologic diagnosis and of the effects of the operation proposed, but were willing to take almost any risk, so appalling had the patient's condition become.

The operation was performed April 29, 1899, with the assistance of Drs. Nutt and Felter of Plymouth. Owing to the very pronounced focal indications, it was decided to ignore the scar and open the skull directly over the hand and arm center, corresponding to the sensitive area before described and to enlarge the opening in the direction of the scar, or make a second opening at this point, if indicated. A skin and bone flap, about 1½ inches in diameter, with the base downward, was formed, its upper portion corresponding to the sensitive area mentioned, while its lower border extended to within about three-fourths of an inch of the scar. The bone was divided chiefly by means of chisel and rawhide mallet. Not the slightest injury was inflicted on the dura, except in the upper anterior angle of the wound, where a large vein was sufficiently opened to give rise to a rapid and extremely troublesome hemorrhage. This was controlled by gauze pressure, as ligation proved impossible without considerably enlarging the opening in the bone. On raising the bone flap, the underlying dura appeared perfectly normal; there was no evidence of old or recent injury, no bulging, no evidence of fracture or depression either at the seat of injury or in its vicinity so far as it could be explored. As the locality of the scar could be quite thoroughly examined through this opening it was decided to make no further one at this time, but to await the result of this operation and meet future indications as they might present themselves. The wound was accordingly dressed, the flap having been replaced, and the patient put to bed with head and shoulders well elevated.

The subsequent course of the case was uneventful. No further hemorrhage followed. On the third day there was a sharp rise in temperature, which promptly subsided on removal of the packing and remained normal thereafter, while the wound healed readily.

From the moment of the operation there was no return of any of the disturbances described, and the young man has to all appearances been perfectly well since. He returned to work after a few weeks, and at this writing, over five months after the operation, is doing full work as laborer in a chair factory.

In the study of this case, the question which most strongly presents itself is that concerning the pathologic condition which brought on the grave disturbances noted; in other words: What was the true nature of the trouble, and what the *modus operandi* by which the apparent good effects of the operative procedure were brought about?

Malingering could be safely excluded, as neither the patient nor his relatives blamed anyone but himself, so that there could be no motive for feigning the symptoms. While in some respects the symptoms reminded one of hysteric manifestations, yet their exact anatomic grouping, together with the history of the case, seemed to preclude this diagnosis. The character of the muscular spasms did not correspond to that of ordinary epilepsy, neither would the history admit of this view.

I am inclined to look on the case as one of cortical irritation due to a mild or subacute inflammatory process, set up at the seat of injury, either from the direct effects of the blow, or from infection through the scalp wound. A pathologic condition of this nature would be likely to be benefited by the relief to the circulation and other local changes incident to the operation.

Whatever interpretation we may give, the case fur-

nishes an interesting illustration of what violent disturbances may follow on comparatively slight traumatisms of the head, or arise from pathologic conditions so difficult of detection as to escape the surgeon's notice. The evident curative effect of the operative interference will admit of several interpretations, according to the view we take of the pathology of the case.

906 N. Eighth Street.

DISCUSSION.

DR. J. T. ESKRIDGE, Denver, Colo.—Did you say, Doctor, that a single convulsion would last an hour, and the attacks would repeat themselves?

DR. REINEKING—The convulsions did not last for more than three to five minutes at a time; there was no rise of temperature noticed.

DR. ESKRIDGE—Some of you may remember that during the War of the Rebellion, Drs. W. W. Keen, S. Weir Mitchell and Dr. Morehouse had charge of the hospital, in Philadelphia, for all of the wounded soldiers. These practitioners took a deep interest in surgical pathology and neurology at that time. The report of their observations was made in 1864, and appeared in the October number of the *American Journal of the Medical Sciences*, for 1864 or 1865. Mitchell reached the conclusion that a convulsion which lasted for more than two minutes, as a rule, was not a genuine epileptic convulsion: that a person might voluntarily so exert himself as to cause the pupils to dilate, as in genuine epilepsy, yet the convulsion be slight. The mere fact that repeated convulsions occurred for an hour or more, without loss of consciousness, and without a rise of temperature, would exclude the possibility of true epilepsy.

I can not agree with the essayist that there are no evidences of hysteria. We must remember that in hysteria there is some starting-point, and in traumatic hysteria the symptoms begin at the point of injury. This man was evidently injured; whether there was any congestion of the brain or not, the local injury would have been sufficient along with the disturbance of brain cells to determine the point of the attack. We do have symptoms in traumatic troubles where there is depression of bone. The convulsions when the depression is over a so-called motor region continue for some time, but rarely is there a convulsion without rise of temperature if the fits, Jacksonian in character, are frequently repeated. The Doctor's case was undoubtedly one of pure hysteric epilepsy due to traumatism, and I heartily indorse the treatment he pursued.

DR. H. REINEKING, closing the discussion—I have not given the subject of hysteria that thorough study which my friend Dr. Eskridge has. What led me to exclude this was chiefly the close correspondence of the symptoms to the lesions and I was under the impression that in hysteria we do not get the exact grouping, or correspondence between the injury and the symptoms, such as we had in the case reported.

SILVER CATGUT AND HOW TO TIE IT.*

BY EDUARD BOECKMANN, M.D.

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ST. PAUL, MINN.

At the meeting of this Academy in Chicago, two years ago, I expressed it as my opinion that ideal catgut had not been discovered, in spite of assertions to the contrary from certain quarters. It was universally admitted at that time that ideal catgut should be, among other things, also antiseptic, to deprive it of its qualities as a culture-medium in the human anatomy for the ever-present bacteria. To this end catgut has been treated with different chemicals, as carbolic acid, sublimate and iodoform. Aseptic catgut, rendered antiseptic with one of these agents, has certainly undergone a great improvement in the direction of ideality, but can hardly be considered ideal, as the carbolic acid is absorbed much more quickly in the tissues than the gut, leaving a culture-medium behind; as sublimate does not penetrate the gut well, forms inert combinations with albuminous substances, and is on the whole an unstable chemical; as iodoform is soon decomposed into free iodin, which makes the gut brown, very brittle and very irritating. Besides, none of these chemicals allows of sterilization of this material by dry heat, and which sterilization should be the last process in its preparation, avoiding all subsequent handling.

I tried to overcome the above objection by impregnation of the catgut with lanolin, and when this proved a failure, by impregnating it with resin, soaking the gut in turpentin oil and evaporating the oil afterward, thus leaving the resin in the gut; neither did this prove successful.

About this time Credé's views on metallic silver as an antiseptic came to my notice, and I grasped his idea with some enthusiasm, as it struck me that we now at least had an antiseptic which would not only remain with the catgut in the tissues to its last fiber but would also allow of sterilization by dry heat as the last step in its surgical preparation. Besides, metallic silver has the advantage of being neither poisonous nor irritating.

In the July number of the *St. Paul Medical Journal* I gave my views on the silver catgut. From the conclusions you will find that I consider silver catgut an almost ideal suturing and ligating material, but that I also admit that it is still open to improvements. The four months which have elapsed since the publication of my paper have also brought about some important improvements, and the catgut I have to-day, for your inspection, is certainly a superior article; still I do not claim for it absolute ideality.

Our demands of ideal catgut are necessarily severe. The raw material must be select as to tensile strength, cleanliness and sterility. Already we here meet with obstacles. The mercantile article is usually very strong, but sometimes has flaws in it, and it does not as a rule look clean, having passed through too many hands, while it is rarely sterile. Ideal catgut must, above all, be both clean and sterile, in other words aseptic. Then it must be antiseptic, and the antiseptic itself should be non-poisonous, non-irritating, able to withstand sterilization by dry heat, and be absorbed proportionately with the absorption of the gut itself, thus acting antiseptically throughout the entire life of the gut, rendering it at all times an unfit medium for the growth of bacteria, and at the same time extending its antiseptic influence to the tract of the gut. Furthermore, the tensile strength must be preserved to such a degree as to satisfy not only that surgeon who uses moderate force in tying, but also that one who practices tight ligation, as the majority persist in doing. Again, the life of the catgut in the tissues should meet the requirements of those who expect a ligature to hold from one to several weeks. The catgut should finally be as pliable as silk, breaks at the knot should not happen, and, last but not least, the knot itself should be made absolutely reliable and of as little bulk as possible.

If all these requirements could be complied with, such a catgut would be ideal and should, on account of its all-important absorbability, render the use of all and every kind of non-absorbable suturing and ligating material superfluous.

To meet the above requirements the catgut is now prepared in the laboratory of the Ramsey County Medical Society in the following way: The raw material, selected for the purpose, is first cleaned by scrubbing it with hot water, soap and sponge, until it looks perfectly white and clean. After this process the catgut will yield

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cultures in bouillon, but not to the same extent as before the cleaning. It is then transferred to the antiseptic solution. Of late a 2 per cent. solution of nitrate of silver has been used in preference to the 1 per cent. lactate of silver solution, recommended by Credé and has been found to penetrate the catgut just as well. In this solution the catgut remains a week or more in a dark place. Catgut, which is intended to last more than one week in the tissues, the average life of plain silver catgut, is, after cleaning, transferred to a formalin solution for one day, after which the formalin is removed by irrigating the catgut with water from the tap for another day. A 1 per cent. formalin solution is used to make a catgut with the life of two weeks in the tissues, while one of 5 per cent. will make it last several weeks. Catgut, treated with formalin and afterward irrigated with sterile—artesian—water will still yield cultures in bouillon. After twenty-four hours of continual irrigation, the formalized catgut is transferred to the 2 per cent. nitrate of silver solution. The catgut may, formalized or not, remain indefinitely in the silver salt solution without any impairment to its tensile strength. The next process consists in desiccating the catgut, stretching it back to its original length, and reducing the silver salt to black, metallic silver. This is done by stretching the gut on especially constructed frames, which are exposed to direct sunlight in a glass case, where it remains until it is not only dry, but also the most possible brown or black. It is now again tested in bouillon, but has never yielded culture; in this condition it is practically sterile, which is no wonder, as a 2 per cent. solution of nitrate of silver is a germicidal one, if soaked through and through the gut for days. But it must be borne in mind that the gut is now antiseptic and that this circumstance may account for the apparent sterility, for which reason, and because some further handling of the gut is necessary, a proper sterilizing process must come last. After completed reduction of the silver salt into metallic silver, the gut is cut up in desirable lengths, made up in coils, wrapped in paraffin paper, placed in envelopes, which can be sealed hermetically, and sterilized by dry heat. As the catgut is practically sterile, when it is placed in the sterilizer, it has not been deemed necessary to expose it to the spore-killing temperature of 284 F. for three hours, a temperature which is trying to the tensile strength. That of 260 F. continued for four hours or more, is, so far as can be judged from cultural and practical experience, perfectly reliable for the sterilization of silver-catgut.

I have already stated that I do not claim for the silver-catgut which has gone through these different processes absolute ideality, and I shall now give my reasons.

1. Although the strands are tried for weak spots, by stretching before they are placed in the envelopes, it may happen that one strand or another after sterilization may be faulty and easily broken at a certain point, for which reason the strand should be tried again before its application, to avoid disappointment.

2. As the catgut after cleansing still develops growth in bouillon, we may assume that it is only apparently clean and that it still contains traces of bacterial products. However, as far as the practical experience goes, mechanical washing seems to clean the gut satisfactorily.

3. As to sterility, the most important point, there is no doubt that the silver-catgut is ideal in this respect.

4. As to its antiseptic properties, I do not believe that silver is an ideal antiseptic for the gut, although I do believe that it is the best for the present time. It is not poisonous, either generally or locally, and it is not irritating. But, if the catgut contains free silver salt; if this, in other words, has not been perfectly reduced throughout, the gut is irritating. Silver-catgut should be of a uniform black or brown color throughout, if the silver-salt has been properly reduced. As a matter of fact the silver-catgut is always darker outside than inside; consequently the reduction is not so complete in the body of the gut, and this circumstance may explain why silver catgut sometimes seems to be slightly irritating. Until a reliable and practical method of perfect reduction is discovered long exposure of the gut to bright sunlight will have to serve the purpose. Reduced silver is evidently a weak antiseptic and more so the slower absorbable the gut is. Plain silver catgut is, therefore, more antiseptic than the formalized, but in both the silver is unquestionably able to make the catgut a neutral medium, but not sufficiently antiseptic to prevent the growth of bacteria in its tract. Such an antiseptic would be ideal, and it would allow the catgut to be used with impunity for skin sutures and without being handled "with gloves." In this respect silver catgut is not entirely ideal. Occasionally slight infection is observed, for which the gut itself is in no way responsible; it seems, however, as if the silver contained in it is able to modify, but not to nullify, such infection, judging from the fact that we never see such pronounced stitch abscesses, which sometimes are observed, when plain, aseptic catgut is used in the skin. Infections, occurring when silver catgut is used, should therefore stimulate the surgeon to improve his technique and also stimulate the man who recommended a certain catgut to seek a more ideal antiseptic. After all, we must be satisfied that silver is a stable, non-poisonous and non-irritating antiseptic which is active throughout the entire life of the gut.

5. The tensile strength of silver catgut is beyond reproach. The secret of preserving tensile strength consists in securing absolute dryness of the envelopes before or during the sterilization, to reduce the dry temperature of 284 F. by some 20 degrees, and to drive off all the formalin in the gut, so treated, as soon as the formalization is completed. If these three points are observed the catgut will come out from the sterilization process nearly as strong as in natural condition. But, as these three points demand the closest attention, mistakes may happen, for which reason the surgeon should try the tensile strength before application.

6. The life of the plain silver catgut has been estimated to be one, that of 1 per cent. formalized silver catgut to be two, and that of 5 per cent. formalized silver catgut six weeks. These figures are arbitrary and must be accepted *cum grano salis*. The finer sizes of catgut are consequently absorbed more quickly than the coarser; the more vascularized the part is, the quicker the catgut is disposed of; it lasts longer under perfectly aseptic conditions than in the presence of sepsis; the dry does not last as long as catgut impregnated with fat, etc. The one-week catgut is, therefore, sometimes disposed of in a couple of days, while the two-weeks' gut may last three weeks or even longer; and as to the six-weeks' gut, I do not really know the exact life, but I assume that it is at least six weeks.

7. It is a *pium desiderium* to prepare the silver catgut in such a manner that it is pliable as silk when removed from the envelope. As it will be very hard to comply with such a wish, the dry and stiff catgut must be rendered pliable by soaking it for a moment in a warm aseptic or antiseptic solution. However, by careful handling such a procedure is superfluous, as the gut will become moist and be rendered pliable by the natural juices of the

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body. Still, it is to be recommended to dip the gut in a sterile solution just before application.

8. Dry catgut is easily broken at the knot, a circumstance which soaking in a sterile solution and considerate handling will prevent.

9. As to reliability at the knot, silver catgut is perfectly reliable, if properly tied. Some precautions are nevertheless necessary, since catgut becomes very slippery when moistened. It may be possible to impregnate it with an agent which will make an ordinary granny knot or a sailor's knot entirely reliable; this would be very desirable, as these knots are the least bulky. As it is, a surgeon's knot, or double-knot, and three of them, are advisable when an absolutely reliable one is demanded. Or a combined surgeon's and sailor's knot may serve the purpose. I have conducted a series of experiments in tying catgut, which tend to prove that three knots should always be made, and these three may, under particular circumstances, be single or double.

10. Is the putting up of silver catgut in envelopes an ideal way of preserving catgut? I like this method of Benckiser better than any other one. The only objection is that the catgut can not be seen, unless the envelope is opened. And simple inspection will usually tell whether the catgut is free from flaws, whether it is of the desirable size, whether the silver is properly reduced, etc. In these respects it may be of some advantage to put the strands up in glass tubes, which can be boiled together with the instruments, rendering it superfluous to use another person to bring out the catgut from its receptacle. But I shall always insist that it is more ideal to have every strand in a separate receptacle, as sterilization in bulk always endangers the asepsis of the fluid in which the catgut is preserved.

There are consequently several improvements to be made, before we can properly speak of ideal catgut. As it is, the silver catgut is so near to ideality that it can successfully take the place of all other kinds of suturing and ligating material. I have now made exclusive use of catgut in my surgical practice for seven years, and with increasing satisfaction, and I have never for a single moment thought of changing my tactics.

Lowry Arcade.

DISCUSSION.

DR. J. F. LORD, Omaha, Neb.—The name of Dr. Boeckmann has become inseparably connected with scientifically prepared catgut if I may so express it. We have all used the different forms as they have come to us, and notwithstanding all of the best methods that we have had for the preparation from time to time, yet it would appear to the credit of Dr. Boeckmann that there has still been room for further improvement in catgut. I have followed his methods in its preparation, and have found that some of the objections which he has mentioned obtained in regard to the dry sterilization and the other various preparations chiefly by formalin. I have practically discarded formalin catgut because of its unreliability. Silver wire stands among the first of antiseptic suture materials, it being probably the most ideal suture, as far as its remaining aseptic is concerned, and in this preparation of absorbable material we have the same salt which is to exert its special influence, and it would appear to me that we have here, as Dr. Boeckmann has suggested, an ideal material. I should say it is practically faultless. Even its color is an advantage to it. I can not say more than this in view of the fact that I have not tried it. Its further trial will probably be necessary to determine whether or not it is going to "fill the bill." Dr. Boeckmann has already well stated what there is to be said in regard to it. I am very much impressed with the value of this material, prepared in the manner he has indicated, and am going to demonstrate my faith in it by its practical use.

DR. E. W. LEE, Omaha, Neb.—There is one point that was brought out in the paper that should be emphasized, namely, that every time we use this or any other catgut, admitting that it is absolutely sterile in every way when it comes into our hands, we must prepare the tissues in the same perfect condition before the catgut is used. A strand may be absolutely sterile, but just as soon as you push it through infected tissue trouble will arise. The use of the cotton glove, which can be easily sterilized, is going to facilitate our work with this suture material and remove, to a great degree, the possibility of stitch abscess. With the most perfect piece of sterilized catgut we are liable to have stitch abscess if the tissues are not rendered perfectly aseptic.

TOBACCO AMBLYOPIA.*

SOME RECENT EXAMINATIONS MADE TO DETERMINE THE INFLUENCE OF TOBACCO ON VISION AMONG THE EMPLOYEES OF THE TOBACCO FACTORIES OF CINCINNATI.

BY FRANCIS DOWLING, M.D.

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CINCINNATI, OHIO.

For several months past I have been making the rounds of our large tobacco factories in Cincinnati, making examinations among the employees to determine how many of them were affected with tobacco amblyopia, as well as to collect such other statistics as were available in regard to this subject. Some years ago I spent a year or more in making a similar series of these examinations in our tobacco factories. The findings in my recent examinations correspond in most particulars with the findings in the first series.

The factories examined into employ collectively over two thousand people, of whom something over one-half are females, ranging from 16 to 45 years of age. Out of this number 153 males were examined and 50 females. Of the males, 23 were more or less affected with tobacco blindness; of the 50 females only 2 were found to be affected. The males examined were between 35 and 65 years of age, and they were all known to be heavy smokers or chewers of tobacco. Some of them both chewed and smoked but, as a general thing, the heavy smokers were not heavy chewers, and vice versa. None of these men drank to any great extent. They were largely thrifty Germans who either drank only a glass or two of beer after working-hours, or did not drink at all. This matter was very closely investigated, and the statements of the men were corroborated by the foremen under whom they worked. Two out of the number who were amblyopic, and who were at times tolerably hard drinkers, were consequently not included in the list of my findings.

A great many of the boys in these factories use tobacco in some form or other, but were not found to be affected with tobacco amblyopia. A large number of the females employed had contracted pupils, but showed no other evidences of tobacco blindness, except two out of the fifty examined, and these had pronounced symptoms of tobacco amblyopia. One of these women, aged 40, who had worked twenty years in cigar factories, had contracted pupils the size of a pinhead. She had a central oval scotoma for green, and has had failing vision for the past year. She rolls cigars and has the moist tobacco in contact with her hands during her entire working-hours. She does not use tobacco in any form, and is not a drinker of alcoholic liquors.

The other woman, aged 43, has worked in cigar fac-

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tories for six years, as a cigar roller. She first complained of failing vision about a year ago, and was finally compelled to give up her work on this account. Vision, when she was examined, was 20/100. She had a central scotoma for red and green, and her pupils were irregularly dilated. There was partial atrophy of both optic discs, but it was more pronounced in the right eye than in the left. She has never used tobacco in any form, and does not drink alcoholic liquors. This woman was treated with strychnia, given internally, and eserin was dropped into the eyes every second day. At the end of six weeks she was decidedly improved.

I am inclined to think that the tobacco-laden atmosphere of these establishments, with a goodly supply of dust included, has very little, if any, influence in the causation of tobacco poisoning, as far as the eyes are concerned; it does, however, seem to exert a deleterious influence as far as other physical symptoms are concerned. I found that the majority of the young girls were anemic looking, and had disorders of digestion, were affected with muscular tremor, and had other symptoms pertaining to a disordered condition of the nervous system. Smoking or chewing tobacco seems to be necessary to produce the peculiar poisoning symptoms on the part of the eyes.

A large number of those who had pronounced symptoms of tobacco amblyopia were examined with the ophthalmoscope, and in each case the fundus of the eye showed more or less paleness of the optic disc, and in eight of the cases there was bilateral atrophy of the temporal half of the discs.

Of all the employees, 90 per cent. used tobacco in some form or other. About 10 per cent. chewed tobacco, in addition to smoking liberally of a pipe or cigars. Most of them did their smoking in the morning or evening, before and after working-hours. The ventilation of the work-room was, as a general thing, as good as could be expected in establishments of this kind.

The principal colors confounded by those who were examined were: red confounded with pink; dark brown for black, the latter usually in the more pronounced cases; green confounded with light blue, yellow or black; white was, as a general thing, confounded with gray of different degrees of intensity, according to the degree of tobacco infection. All of these cases were only affected for the central colors of the test; the colors in the periphery could be distinguished without much difficulty.

The men examined ranged in age from 30 to 65 years, and were among the heaviest consumers of tobacco in the factories; so that they were among the best subjects that could be had for the object in view, viz., ascertaining the effects of tobacco on the system.

The majority of those who were examined showed evidence of a contracted condition of both pupils. This was present in many who showed no other evidence of tobacco poisoning, but it was marked and persistent in those who showed other well-marked evidence of tobacco infection. Twenty-three out of the 153 complained of a gradual failure of vision. Three-fourths of all the men examined were over 35 years of age, and the oldest man examined was 65. Some of those examined smoked as high as twenty cigars a day. Many of them declared that they were compelled to stop smoking for a month or so at a time on account of unpleasant feelings in the head and a difficulty in reading, from confused vision.

Among the 30 negroes examined, none showed evidence of tobacco amblyopia, although they were all heavy users of tobacco, most of them being chewers, and some of them smoking in addition. Judging from those who were examined in this instance, and others, who were formerly examined, I am inclined to think that the negro race enjoys an immunity from tobacco blindness.

When I commenced my examinations in the factories, I was under the impression that the constant inhalation of the dust, and the odor of tobacco in the work-shops, would tend in itself to bring about symptoms of tobacco amblyopia. I am inclined to think this hardly takes place, for in my examination I found that those who did not smoke nor chew were, with two exceptions, free from troubles of vision of a toxic nature.

As a result of all my investigations in this department, the following would be a fair résumé of the principal symptoms which characterize chronic tobacco poisoning, affecting both the general system and the organs of vision.

General Symptoms.—The subjects are light eaters, and the appetite is easily satisfied; a large number have a decided antipathy to meat. Constipation is usual. The sleep is usually disturbed, often by disagreeable dreams. They usually have to go to bed late, as they claim, in order to be able to fall asleep. They often wake for some time. They usually complain of more or less palpitation of the heart, and the pulse usually ranges at about 90 or over. On taking any great amount of exercise the muscles feel unusually tired, and the hand often has a characteristic tremble on holding a book or pen. A case in which this latter symptom was particularly well marked came under my treatment recently, in a man who was a heavy smoker, and who had pronounced symptoms of tobacco amblyopia in addition.

Eye Symptoms.—The subjects who usually suffer with tobacco blindness are almost always males between the ages of 30 and 60 years. Exceptions to this occasionally occur, and in my own series of examinations I found one man, aged 19, who presented a well-marked case of this trouble. He was a most inveterate chewer and smoker of tobacco. Noyes also states that he treated a boy of 15, who presented a classic case of this disease. The boy was an inveterate cigarette smoker. In speaking of this subject, Forster, of Breslau, says that he has never seen a case of tobacco amblyopia in a person under the twenty-sixth year, but that they are mostly from 30 to 65 years of age.

There is almost always a gradual but progressive failure of visual acuteness in both eyes. This was noticed more or less in a large number of all those I examined. Luminous objects dazzle the eyesight, and a bright light is worse for reading by than a subdued one. These patients see better in the evening than in the middle of the day, and in this connection Forster cites the case of an old smoker who, in playing nine-pins, could not distinguish between the upright pins and those that were down during the bright light of day, but had no difficulty in that direction as evening came on. In addition to this, patients often complain of a glimmering mist which covers all objects, especially in a bright light. These subjects almost always confound colors for central vision. First in the order comes red; this is generally taken for dark brown, pink or black. Then in order comes white, which is taken for dark gray or black. Pink to these subjects often looks like blue. It must be remembered that it is only for the central visual field that these colors are confounded; the periphery is usually seen all right.

Myosis:—Persistent contraction of both pupils is generally present, and this was the most frequent of all the symptoms noticed in the cases examined; and I could almost always tell by looking at the pupils in ad-

vance of the rest of the examination that the subject would fail to make out the colors of the test. This symptom was present in many cases where the men were heavy chewers of tobacco, even when there was very little other evidence of infection. It would be well to mention here that in some cases this contraction is so pronounced that it is impossible to illuminate the eye chamber sufficiently to make an examination of its fundus by means of the ophthalmoscope. All the symptoms mentioned are more marked in the case of chewers of tobacco than in smokers. This we can probably explain by the fact that in the case of chewing more nicotin is absorbed than in the case of smoking, for in the latter a great part of this poisonous agent is volatilized by the heat and escapes with the smoke; while in the former most of it is directly absorbed into the circulation through the blood-vessels of the mouth and tongue.

Lastly, the ophthalmoscopic examination of the eyes of those affected with tobacco amblyopia reveals the papilla of the optic nerve to be more than usually red in the early part of the affection. Later it appears anemic, especially on the temporal half, and finally atrophy of the disc takes place. It is quite probable that these changes in the papilla are caused by direct action of the nicotin, which enters the circulation and causes contraction of the smooth muscular fibers, and then, diminishing the caliber of the minute blood-vessels of the part, the irritation of the nerve tissue of this essentially sensitive body takes place at the same time, by means of this agent, and this explains the congested condition of the part seen in the early history of the disease. The pressure, etc., caused by the congestion finally produces a gradual atrophy of the disc, and eventually more or less of the contiguous retina, according to the duration of the disease and the amount of tobacco infection.

Statistics.—Dr. Swanzig says that tobacco blindness is more common in England and Ireland than in Germany, where light cigars are more in use than the stronger ones of England and Ireland. I think another reason, in addition to the one cited by Swanzig, is that in England and Ireland the stronger alcoholic drinks are used in preference to the comparatively weak malt liquors of Germany. These alcoholic drinks have a greater tendency to lower the tone of the system than those of malt, and thus powerfully aid the action of tobacco in producing its poisonous effects. This is particularly so among the poorer classes.

Prognosis.—The prognosis is good if the patient comes under treatment early. In some cases complete recovery occurs, and very great improvement is a rule. In long-standing cases a moderate improvement is all that can be expected. If smoking is persisted in, no improvement takes place under any system of treatment. Under proper care fully 60 per cent. recover.

Treatment.—It is necessary in the first place to absolutely forbid the use of tobacco in any form; next, the use of alcoholic drinks. The very worst cases to cure are those arising from chewing tobacco. From six to twelve weeks' treatment is usually necessary to effect a cure. Haughton, in his experiments, has shown that there is an antagonism between nicotin and strychnin, hence the usefulness of this latter agent in the treatment of this disease. I have been more successful with it in combination with arsenious acid and other tonics than with any other mode of treatment.

Literature.—Tobacco was not used in Europe till about the close of the fifteenth century, soon after the return of Columbus from his first discoveries. From that time on its consumption spread from country to country until it is now more or less extensively used throughout the world.

Statistics show that the per capita consumption of tobacco in Germany alone, every year, is 3½ pounds; in France, nearly 2 pounds; and in Austria, nearly the same quantity is consumed. Counting the adult males in Germany as one in five of the population, every adult male in that country would use seventeen pounds of tobacco per year.

The deleterious effects of tobacco, on the system in general or on the eyes, is due, as we all know, to the presence of a poisonous ingredient called nicotin. This oily, colorless fluid diffuses itself into the blood with as much rapidity as prussic acid, and a poisonous dose has been known to kill an adult in three minutes. Nicotin, when heated to 250 degrees, becomes volatilized and decomposed, but if watery vapor is present, volatilization takes place without decomposition. When dry tobacco is smoked the greater part of the nicotin is decomposed by the heat, and passes off with the smoke. The more moist the tobacco, and the cheap grades are usually damp, the more is this retarded. The cheaper grades of tobacco contain more nicotin than the dearer ones, and consequently are more injurious to the consumers; and this is probably one reason why tobacco blindness is more common among the poorer classes than among the rich. The tobacco used for chewing purposes is usually very rich in nicotin.

124 West Ninth Street.

ELECTROCAUTERY IN AFFECTIONS OF THE LIDS AND OF THE CORNEA.*

BY FLAVEL B. TIFFANY, A.M., M.D.
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Since I commenced the special practice of ophthalmology, more than twenty years ago, several drugs and modes of treatment then unknown to the profession have been introduced, and since their therapeutic value has been fully established we scarcely realize how it was possible to have done without them. Sulphate of eserin, for instance, is a drug that has aborted hundreds of cases of that most terrible disease, glaucoma. Eserin, from its myotic influence has prevented blindness and given relief from the agonizing pain, and frequently conserved vision. Cocain has well-nigh revolutionized ophthalmology. Thanks to it, general anesthesia, with its unpleasant and oftentimes serious consequences, is no longer to be dreaded in many of the operations on this delicate and sensitive organ, and we can scarcely see how the various affections could be treated and the operations made without it. So too jequirity has its special place in ophthalmology. Of late we are given the extract of the suprarenal capsule, which is also destined to prove a valuable agent in many of the affections of the eye and its appendages, as well as in the operations on these parts. When a new drug or new method of surgical treatment is introduced, there are always many enthusiasts who overestimate its value. On the other hand, there are others who are too incredulous or doubtful; who either decry or ignore its value, and thus retard its usefulness.

Not until electricity was introduced as a therapeutic agent was the thermocautery fully appreciated as a curative agent in affections of the eye. Thanks now to the more modern perfected appliances, several of the diseases of the cornea, and especially ulcers, are checked in their destructive course and the eye is saved, whereas

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without its use, as in former times, sloughing and necrosis would persistently go on until the eye was lost. You will agree with me that the electrocautery is one of the most efficient and reliable agents in rodent, indolent or phagedenic ulcers of the cornea. For persistent fistula of the cornea there is no medicament nor surgical treatment that will take the place of electrocauterization. For several years I have resorted to it in phlyctenular keratitis, especially in the recurrent obstinate forms. For the last few months I have used it repeatedly in pannus crassus, in which I usually first make peritomy, cutting through the conjunctiva with the neoplastic vascular tissue down to the sclera, and then, with the flat surface of the electrode at a white heat, I burn the pannus or vascular neoplasm down to the anterior elastic lamina of the cornea. I do not hesitate to make extensive searing, embracing the entire area of the pannus tissue. In no instance have I had any ill results from this extensive burning, but, on the other hand, without an exception, when the cornea was even so enmassed by the pannus as to hide from view the iris, the cornea so treated would clear up and good vision be regained.

In treating trachoma, which is the cause of pannus as a rule, I depend more especially on the expression treatment, squeezing and rolling out the granules with the forceps, but I always take care not to make the two operations at one and the same sitting, for fear of an adhesion of the raw lid to the cauterized cornea. I believe—from my experience—that the cautery in treating pannus is far superior to any other method yet introduced, especially where trachoma complications do not exist. This treatment can be given under the influence of cocain, without any pain to the patient.

Within the last two months it has been my fortune to have, for treatment, several cases of keratoconus as well as of staphyloma. Instead of excising a portion of the cornea and closing the parts with sutures, which is a very hazardous treatment and of little benefit to vision, leaving as it does a scarred cornea, I have found the electrocautery most efficient. Recently I operated for an extensive conical cornea with a leucoma directly in front of the pupil, with the electrocautery, gaining most satisfactory results. In this case the cone was so great that the patient was scarcely able to close her lids over it, and, even when they were closed, there was a marked protrusion. In this case I used the sharp cutting edge of the white hot blade, going through the first three layers down to the posterior elastic lamina. The incision was made vertically, slightly to the temporal side of the pupil, from near the upper edge of the cornea down to within a few millimeters of the lower edge; this had the effect of flattening the cornea to its normal curvature, and also of promoting absorption of the leucoma, and without the slightest scar visible to the naked eye. If this treatment proves to be as valuable an agent in keratoconus in other hands as it is in mine, it will certainly be an advantage to ophthalmology. I have not used it in cases of pterygium sufficiently to give an opinion as to its value or detriment in this affection. I do not believe that we should be warranted in using it in pterygium excepting to cauterize the apex or that part which has invaded the cornea. In doing this it will check and dissipate the growth.

The electrocautery is also a valuable agent in treating those most troublesome affections of the lids, namely, ectropion, entropion, distichiasis, and trichiasis. We all know, too well, how difficult it is to restore the edge of the lid, be it once distorted from or toward the eye, especially with the erring lashes irritating the eyeball. In former times an extensive, tedious, laborious operation had to be made, taking perhaps several hours and by no means with uniform good success, and besides, as a rule with little or no financial compensation, as these diseases are usually in the poorer and lower classes who are unable to pay a fee. With the electrocautery, in most of these cases, the same or better results can be obtained in two or three minutes, with no fatigue to the surgeon, than can be gotten by the tedious operation of former days.

For ectropion I incise with the white-hot blade, through the conjunctiva to the tarsal cartilage, from the external canthus to near the punctum, 2 or 3 mm. from the edge of the lid. This not only draws the lid up to its place against the eye, but reduces the hypertrophied, vascular tissue which usually exists in this affection. It is sometimes necessary to make more than one incision; the second and third should be parallel with the first and toward the cul-de-sac. The result from this treatment is more marked subsequently, because of the cicatrization, than at the time of the operation. For entropion I always use the clamp, putting the integument of the lid on the stretch, thus preventing too much contracting or puckering of the skin or the tissue, from the cremation. In operating for entropion I take care not to go too near to the free edge of the lid, lest the hair follicles of the lashes be destroyed by the intense heat, and as a sequent, lippitude. The patient being under the influence of chloroform, the clamp applied, an incision is made from the punctum to the canthus, 2 or 3 mm. from the edge of the lid, through the integument into the tarsal cartilage. Where there is much hypertrophy of the lid with a decided curvature of the mucous surface, after making incision with the cutting blade of the electrode, I occasionally use an electro-narrow knife with the flat blade searing the connective tissue down to the tarsal cartilage, taking care not to go too near the hair follicles. This procedure is quickly and easily done, and in the less complicated cases gains the desired results. For distichiasis and trichiasis I frequently resort to this treatment, limiting the incisions to the parts involved. The electrocautery thus used has the effect of not only turning the margin of the lid with the lashes away from the eyeball to its normal position, but it also reduces the thickened hypertrophied tissue and straightens the mucous surface curvature. Sometimes there is a slight scar from the cauterization, but not much more than from the old operation with the ordinary scalpel. Any slight scar existing, will in time, with a little massage, be obliterated.

805 McGee Street.

FOOD AND DRINK.*

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The larger part of the activities of man are spent in search of nutriment. In his diligence nothing escapes attention either in the animal or vegetable kingdom. A ceaseless and relentless hand is laid on almost every living or growing thing to provide material to appease and satisfy human appetite. Nothing great nor small, of either real or fancied value as nutriment, is missed by man, determined to have all there is to eat and drink. The animal cell has not changed in any particular during the period of its existence, and the requirements for

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growth and repair remain as ever the same. Even with the vast modifications since the advent of steam and electricity, primitive and simple limitations at this time govern a considerable proportion of the human family in its food-supply. There are whole races of men of sturdy and enduring structure subsisting on one or more natural products of the ground to the exclusion of variety or flesh. The work and patience of the rice-eatng oriental outrivals the endurance of such as think strength depends on much variety and a mixed diet.

Meat eaters are not able to boast of advantages that do not also attend those whose food is a vegetable diet. In the selection of edible material taste and means to purchase it play a most important part. The habit of a varied and mixed meal of victuals thrice each day is widely taught in the homes of all classes in this and other advanced countries. There are few who stop to think whether it is useful or harmful. Sickness is nearly or quite universal among civilized nations, and less in degree among lower grades of mankind, and even quite rare in some primitive races. Eating to excess, of whatever nature of food, if frequently repeated, leads to certain unpleasant consequences. But from a failure to associate cause and its effect, it is much more than probable that much sickness and many premature deaths are directly due to the fatal error of crowding the body with more food than is safe. It is a nice point to determine as to the exact relation between the bodily need and its supply, i. e., not to under or overestimate the vital capacity under different conditions. Few, indeed, have knowledge to that required degree, and it naturally follows that the many are paying a penalty in sickness and suffering, for their mistakes.

The profession, except here and there, fails to appreciate that disease is principally self-induced through the misuses of the stomach. It would be far more helpful to the patients if greater attention were given to dietetics. Conditions of health or its absence are affected by bodily habits, and daily mistakes at the breakfast, lunch and dinner, outbalance in the long run the tendency of physiologic restitution. Let it then be clearly spoken as my experience in a practice of nearly twenty years, that pathology is a condition closely allied with the sad misfortunes of feeding the body in excess of its needs and beyond the capacity of its power of elimination. Carbonic acid gas is a directly resulting waste product and is deadly to cell protoplasm if retained in the system too long. It is reasonable to assert that it is overmuch rather than too little food which is responsible for human pain and bad stomachs. There are ample proofs to show also that it is not a need of greater variety either of vegetable, flesh or mixed diet, that is consistent with health, but the use of such diets in moderation. The organism of man is able to safely appropriate the food materials of all kinds. Any diet may be healthful that is natural, i. e., not artificial, if properly proportioned to the bodily requirements. It may be a diet of one or more substances, such as meat alone, or it may be one article day after day, as in the case of the Chinese and their rice, or it may have all the variety of the American table, if moderation governs the apppetite and prudence regulates the quantity. It is a great mistake to eat too much, and it leads to frequent fatal complications. There is no precise weight of food suitable for all persons, as each is an independent consumer, and with necessities peculiarly his own. With few exceptions every class of society abuses the pleasure of appetite, and therein lies the chiefest explanation of the origin of bodily and mental diseases. The solids, liquids and gases within are augmented in vigor or degenerated, in direct relation to the appropriateness or the inappropriateness of the food-supply. It is the refuse within the organism which, remaining in touch with the vital fluids and tissues for a too long space of time, is turned into the toxins. This toxic matter, fluid, solid or gaseous, kept too long in contact with vital tissues and nerves, induces a series of unnatural sensations. Bodily sensations, when disagreeable or painful, are the symptoms of disease. True medicine or science applies itself at this moment in rightly directed measures that stop further toxic production and at the same time also hasten a removal of such toxin as is already formed. If symptoms are wisely and promptly overcome in a truly scientific manner, little harm results to the organism and a valuable lesson may have been learned by both physician and patient. Much pitiable blundering often passes for scientific treatment, that is called "regular," but to the disparagement of the worth of capable medical science.

Two meals of food each day are safer than three, even if the quantity taken be the same. The early morning hours are accompanied with the least stomachic and intestinal resources for a satisfactory digestion. Waiting till noon or nearly the middle of the day for the first meal has, in practice, yielded benefits to patients placed on that plan. Good results are also obtained by making the first meal of fruit or some plain food, followed by a hearty lunch. It is my wish to especially emphasize this fact, learned in years of practice, viz.: It is not so important what is eaten as it is *when* and *how much*. Seasoning of food encourages overeating; the same is the rational objection to sauces and vinegars and all sorts of dressings. The needs of the stomach are easily satisfied, but the artificial appetite created by the cooks, and tradesmen who have everything conceivable to tickle the palate, is hard to satisfy. In the attempt to give it what it craves, sickness, pain and death are sometimes the logical conclusions. It takes much experience and discrimination on the part of physicians to save patients from over-indulgence. It is pleasant to gratify the natural demands of a healthy organism, but moderation is needful at all times to keep in check tendencies that grow unawares into self-injury.

DRINK.

An ocean of water and not a drop to drink is now and then one of the most pitiable of human sufferings. Could all the dwellings in any large city be open to view there would be a sight of wholesale anguish, for nearly every house has its quota of sick and dying. Yet, strange as it may seem, but few are aware that a cool drink of water has virtues superior to any and all saving agencies. There are everywhere attempts made to cheat human nature of its just heritage. There is no substitute for plain water for the animal economy. Anything added to pure water must be regarded as an adulterant. Some such mixtures are slightly injurious, while the largest number comprise positively deadly ingredients. Water drinkers, according to what may be expected, are seldom sick and are the longest lived, other conditions being equal. The wide-spread habit of drinking liquors, mild or strong, is a custom cultivated in a manner similar to that of acquiring a taste for highly seasoned food. Men everywhere are trying to find how to keep well and live happily and long, but continually miss the essentials. Few persons take an adequate amount of water to meet the daily wants of the system. A very large number are actually falling behind in health for the lack of a little more pure water to cool and re-

fresh the overheated blood. Water is frequently repudiated by men and women, wholly unmindful that it has advantages for them beyond price. There are no known counterindications to water as a drink, and the quantity may be whatever the stomach and intestines are able to absorb. It is safe to say that pure water may be drunk at any time and with hardly any limitations save such as might appeal to anyone. In many cases, covering seventeen years of observation, drinking of water freely with meals, immediately before or after them, has not been attended with bad effects, nor does it justify the numerous precautions generally given against mixing water and food in the stomach. Rightly considered, drinking with meals ought to be a benefit. It holds the food in better solution till acted on by the juices, supplying fluid to the blood-stream, and, most important, forming a natural safeguard against gluttony. It is possible to keep well for a certain length of time without attention to physiology or dietetics, but it is a mistake which comes in for compound interest at the end. Moderately used, it is reasonably safe to indulge in coffee, tea and even alchoholics, but it is a hazard which a first-class life risk should avoid. Water is universally man's sweetest and safest drink, and rightly used would in itself largely help to extend his life well toward the century mark. Food tastes better and is more agreeably relished by the water drinker than by those who drink wine at table. Liquors confer no useful assistance in passing the dangers of life, and in self-interest it would be nearer to safety to let Nature's provision for drink have full credit, as being the best, and accept no tradesman's substitute. The best drink for man is pure water, and the ordinary drinking water of a country is always superior to any of the so-called health waters or bottle drinks.

10 W. Forty-ninth Street.

V. 34
1900

A SULPHOSALT OF THE ALIPHATIC CREOSOTE-ESTERS, AND ITS THERAPEUTIC USEFULNESS.*

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Early in May, 1898, Dr. G. Wendt, of Berlin, the manufacturer of a series of sulpho-acid salts of the aliphatic creosote-esters, through his American agents,[1] placed some of his products in my hands for therapeutic investigation. In responding to the kind invitation of your secretary, I grasped the opportunity to report at this meeting the therapeutic qualities of one of these salts.

Besides the lime salt, of which I shall presently speak, a salt of silver, argentum eosolicum, $C_6HOCH_3OC_2H_3OAg_3(SO_3)_3$, resp. C_9, H_7, Ag_3, S_3, O_{12} and one of quinin, chininum eosolicum, $(C_9H_7S_3O_{12})(C_{20}H_{24}N_2O_2)_3$, were given to me in order to determine their therapeutic usefulness. Experimental work of another nature, however, prevented me from taking up the latter combinations on a larger scale.

The *calcium salt* was the one most experimented with by me. Three distinct therapeutic elements enter into its composition, viz., sulphur, creosote-ester and calcium.

Sulphur stimulates the mucosa of the alimentary tract and its administration is frequently followed by a slight increase of intestinal secretion and peristalsis. Besides its valuable antifermentative properties, it seems to exhibit an especial affinity for one or the other components of the tissue albumin. Thus, I think, it facilitates the resorption or the deposition of the creosote derivative into the glandular system.

The therapeutic value of creosote or its esters is too well known to be discussed here at length. Undoubtedly creosote is gradually split up into more simple bodies, in which forms it is carried to the different organs. The neutralizing and antiputrefactive powers of creosote are comparatively limited if tested in the laboratory; in the body, however, it exerts these qualities in a greater measure than the majority of the more energetic so-called antiseptics. This fact I attribute to its non-coagulating of albumin. Mercuric corrosive chlorid, carbolic acid, salicylic acid, alcohol, betanaphthol-sulphonate, resorcin, zinc chlorid, zinc sulphate and other antiseptic agents are coagulants of albumin, and as such may become tissue destroyers. In consequence thereof great caution is exercised with most of these antiseptics when administered internally, and only small doses of them, in many instances insufficient for the purpose, are as a rule prescribed. Moreover, as is the case with corrosive sublimate for instance, Koch's "strongest antiseptic," the mercury coagulates and throws down the albumin occurring in the medium to be disinfected, combining to mercury albuminate, also possessing antiseptic qualities but which, by its formation, deprives the supernatent fluid almost totally of its contents of mercury. The internal administration, therefore, of mercuric chlorid, and the antiseptics belonging to its class, should be restricted to certain specific and well-defined pathologic conditions, and their employment as disinfectants or germicides, if not otherwise combined, should be abandoned altogether, both on account of their toxicity and their relative inefficiency in all those chronic affections, characterized by progressive systemic decline.

Calcium, finally, that is the form found in this salt, lessens the acid degree of the material contained in the alimentary organs, thereby preventing or allaying undue irritation and neutralizing certain substances of toxic tendencies.

The *eosolate of calcium* considered as a guaiacol derivative has this formula: $(C_9H_7S_3O_{12})_2$. Ca_3 and contains, therefore, in the neighborhood of 25 per cent. of creosote. It is a grayish powder, feeling to the touch like finely pulverized pumice-stone. Its odor is slightly pungent and somewhat ethereal, its taste a little acrid and leathery. It is soluble in from eight to ten parts of cold, and in seven parts of hot water. It is very slightly soluble in alcohol, and insoluble in chloroform and turpentin, but is readily dissolved by hydrochloric and by citric, and by some other organic acids, while it dissolves only slowly in acetic acid.

In a dog, weighing 16 kilog., 3 gm. of the eosolate of calcium produced severe vomiting and catarrhal condition of the nasal and pharyngeal mucosa. In a dog weighing 7.5 kilog., 3 gm. of the salt brought on vomiting, intense purgation and marked emaciation. In the healthy human organism 0.33 seemed to exert but little influence; 0.6 has produced a fulness in the epigastric region, slight constipation and diaphoresis; 1 gm. has produced griping pains in the intestines, and the ingestion of 2 gm. was followed by a profuse diarrhea.

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1 The Fischer Chemical Importing Co., New York City.

Eosolate of calcium, in doses less than 1 gm., does not impart the greenish tint to the urine which generally appears after the ingestion of phenols. When 2 gms were administered, a discoloration was noticeable in some instances.

I have clinically experimented with *calcium eosolicum* in a variety of disorders. I report the following cases:

DIABETES INSIPIDUS.

CASE 1.—W. C., male, aged 16 years, an American with no occupation, was referred to me for treatment on May 22, 1898.

Anamnesis.—Healthy parentage. The patient met with a severe accident when 7 years old, from the effects of which he never fully recuperated. Hydruria or polyuria were present ever since, and the body development came to a standstill; he was under the care of a score of physicians.

Examination.—He to all appearances looked like a 9 or 10-year-old boy; height, 4 feet 8¼ inches, weight 35.5 kilog. Temperature, rectal, was 36.7 C. (98 F.). Pronounced emaciation and nervousness was evident. Physical examination of the heart and lungs revealed no disorder. The digestive organs and abdominal viscera were apparently normal. Mental acuteness was very keen, memory good, and there were no luetic symptoms.

Urine (voided in my presence).—570 c.c.; watery, odorless, sp. gr. 1002, very clear, acid (degree 0.03); solids, 1.5 gm.; carbamid, 0.571 gm.; chlorids, 0.285 gm.; phosphates, see degree of acidity; no albumin, no dextrose.

Treatment.—No dietetic restrictions were imposed, but a bath of 37.5 C. every other night; extract ergot fl., 3 gm., four times a day. On May 31 the patient was still more emaciated—weight 35 kilog.; rectal temperature 36.6 C. (97.8 F.). He had voided, since 8 p.m. of the previous day, the following amounts of urine:

No. of Micturition.	Time.	Amount.
1	May 30, 8 p.m.	420 c.c.
2	May 30, 9:30 p.m.	420 c.c.
3	During night	780 c.c.
4	During night	570 c.c.
5	May 30, 7:20 a.m.	690 c.c.
6	May 30, 9:55 a.m.	960 c.c.
7	May 30, 12 m.	630 c.c.
8	May 30, 4 p.m.	930 c.c.
9	May 30, 6 p.m.	660 c.c.
10	May 30, 7:30 p.m.	630 c.c.
		6690 c.c.

The specific gravity of the twenty-four hours' urine was 998.5.[2] I mention this fact in particular, as I have never before seen a specimen of urine lighter than water, and as I, in the literature of this subject, failed to notice any references to urines of a specific gravity less than 1000. I must add that the urine had cooled before the specific gravity was ascertained: Two hydrometers standardized at 25 C. were employed; both indicated the same degree. The urinoglucosometer devised by me, one of the scales of which descends to 990 degrees, pointed out a density somewhat higher, but still below 999 degrees. This instrument being standardized at 15.6 C., it was necessary to cool off the urine to that temperature. Pycnometric measurements were not made.

Treatment.—This was free ingestion of milk, to the total exclusion of all other nutrients and water; sitz baths slightly above body temperature; faradism, the ergot withdrawn and substituted by calcium eosolicum, 0.3 gm., three times daily.

The patient, as seen from the table, steadily gained in weight under this treatment. This was the more remarkable, as an increase in weight had not been noticed for years. At the same time the patient lost much of his nervousness and developed a healthy appearance. The hydruric condition improved gradually, that is in a relative sense. The quantity of the twenty-four-hours urine for the total period became remarkably diminished, though occasional increases were recorded, and the amount of solids excreted, as seen by the urinary density, was far in excess of that prior to the institution of this treatment.

2 I deem it irrelevant for the present purpose to give all the dates of the various very minute and exactive urinary examinations. I shall attempt to report this case in full at some other time.

From June 1-2 to June 17, the following records were taken:

Date.	Time.	Quantity of urine voided in c.c.	Number of micturitions.	Average amount of urine voided at each micturition.	Specific gravity of 24 hours' urine.	Quantity of milk ingested in c.c.	Body weight in Kg.
June 1- 2, 1898	From 7:30 P.M. to 6:50 P.M.	7,800	10	780	1002	8,000	35.25
June 2- 3, 1898	From 6:50 P.M. to 8 P.M.	7,050	9	783.33	1006	7,500	
June 3- 4, 1898	From 8 P.M. to 6:30 P.M.	6,600	11	600	1004	7,000	35.75
June 4- 5, 1898	From 6:30 P.M. to 6 P.M.	6,720	10	672	1007	8,000	36
June 5- 6, 1898	From 6 P.M. to 8 P.M.	8,360	14	582.86	1004	8,000	
June 6- 7, 1898	From 8 P.M. to 8 P.M.	6,000	10	600	1008	8,000	
June 7- 8, 1898	From 8 P.M. to 8 P.M.	6,600	10	660	1004	8,000	37
June 8- 9, 1898	From 8 P.M. to 8 P.M.	5,400	10	540	1006	8,000	
June 9-10, 1898	From 8 P.M. to 8 P.M.	5,700	10	570	1006	8,000	37.5
June 10-11, 1898	From 8 P.M. to 8 P.M.	6,000	10	600	1005	8,000	
June 11-12, 1898	From 8 P.M. to 8 P.M.	4,800	9	533.33	1008	8,000	
June 12-13, 1898	From 8 P.M. to 8 P.M.	7,500	12	625	1007	8,000	38.5
June 13-14, 1898	From 8 P.M. to 8 P.M.	5,400	8	675	1005	7,000	
June 14-15, 1898	From 8 P.M. to 8 P.M.	3,250	11	477.27	1009	7,000	
June 15-16, 1898	From 8 P.M. to 8 P.M.	5,100	10	510	1008	7,000	
June 16-17, 1898	From 8 P.M. to 8 P.M.	4,500	9	500	1009	7,000	39.25

June 19: Weight, 39.75 kilog.; rectal temperature, 37.2 C. (99 F.), and improvement plainly noticeable. Treatment: Diet, 5 liters of milk per diem; calcium eosolicum, 0.3 gm. four times daily.

June 26: Weight, 40 kilog.; rectal temperature, 37.2 C. (99 F.), the hydruric symptoms still improving. Treatment: Diet, 4 liters of milk daily (the amount had to be lowered as the patient developed a dislike for it); calcium eosolicum, 0.5 gm. four times daily.

July 7: Weight, 40 kilog., hydruria diminished.

July 11: Weight, 40 kilog.; the amount of urine voided 4200 c.c. Treatment: Mixed food and water *ad lib.*, and calcium eosolicum continued.

July 20: Weight, 40.5 kilog.; rectal temperature, 37.1 C. (98.8 F.), with diuresis somewhat more pronounced.

July 23: Weight, 40 kilog.; rectal temperature, 37.2 C. (99 F.), diuresis declining. The patient felt very comfortable, with thirst diminished. Calcium eosolicum was advised to be continued and he was discharged, improving.[3]

CASE 2.—E. R., male, aged 47, married, American; first consulted me on May 19, 1897. He had felt depressed for some time, and complained of anorexia, constipation, great thirst, polyuria and deterioration of sexual power, and of an eczematous condition on the neck and extremities. His weight was 68.5 kilog.; temperature (axilla), 37.1 C. (98.8 F.), with hydruresis very pronounced. The urine was pale, limpid, sp. gr. 1002, neutral; no excess of phosphates, chlorids or sulphates; urea increased absolutely; neither albumin nor glucose.

Treatment.—No restriction of diet or water was imposed, but alcoholics were prohibited, and antipyrin, 0.35 gm. given three times daily, with local medication for eczema. The symptoms did not improve, and successively ergot, Fowler's solution, salol and strychnia were prescribed without effecting any change in the general condition.

On November 16 an absolute milk diet was ordered. Dipsesis decreased somewhat, as well as did diuresis. All medical agencies were dispensed with, excepting local applications. Toward the middle of January, 1898, the patient had to abandon the milk regimen and return to the unrestricted diet.

January 26: Weight 69.25 kilog., temperature normal. He was very irritable; thirst and diuresis slightly augmented.

The status of the patient, in general, remained unaltered, with no permanent improvement.

May 14: The milk regimen was resorted to again, and a fortnight later calcium eosolicum in 0.3 gm. doses four times daily was ordered to be taken.

June 12: Patient weighed 72 kilog. and felt very well. The eczema had disappeared; feeling of thirst and diuresis greatly improved—amount of twenty-four hours urine, 3800 c.c., while 5 liters of milk were taken.

The milk regimen was dispensed with after another week and the dose of calcium eosolicum increased to 0.75 gm. four times daily. A decided and progressive improvement followed the administration of this medicine, which, in this dose even, was well borne by the stomach; an occasional slight constipation was caused

3 The patient returned to his native village in a neighboring State. The last time he wrote to me he reported further improvement.

by the calcium salt, but readily yielded to mild evacuants. I found the patient, when last seen in August, 1898, in high spirits and he was reminded of his recent condition only by transitory attacks of dipsesis and subsequent hydruria.

CASE 3.—B. I., female, aged 24, married, American, and **mother of one child, suffered from polydipsia, hyperdiuresis,** progressive emaciation and dysphoria for about six months, when she was referred to me for treatment on Sept. 26, 1898. **Her weight was 55.5 kilog., her rectal temperature 37.2 C.** (99 F.); **bronchial irritation** and cough were present, the lungs and abdominal organs apparently sound. The urine was pathognomonic of hydruria; excessive in quantity, of water-color, of low density and a faint acidity. The patient was put on an exclusive milk diet and on calcium eosolicum, 0.5 gm. four times daily. She reported improvement on September 30. The milk regimen was continued (5 liters for the twenty-four hours), and the dose of the medicine increased to 0.75 gm.

October 6: Her weight amounted to 56.5 kilog., and her rectal temperature was 37.3 C. (99.1 F.); polydipsia and diuresis were diminished.

The urine voided from October 12, 11 a.m., to October 13, 11 a.m., was 3150 c.c.; the milk ingested, 4500 c.c. Her weight, October 13, was 58 kilog.; rectal temperature 37.3 C. (99 F.). She continued to improve when seen last in November, 1898.

DIABETES MELLITUS.

I have tested calcium eosolicum in five diabetic patients. I shall not endeavor to relate the complete clinical history of these cases, but will refer briefly only to the periods during which the medicine was taken.

CASE 1.—Mrs. B., aged 65, English, had been affected with diabetes mellitus since her 58th year, the quantity of urinary glucose under a milk regimen and a moderate mixed diet fluctuating between 0.25 and 2.5 per cent. Absolute proteid nourishment was not permissible, on account of excess of acetone and the presence of ethyldiacetic acid in the urine.

May 27, 1898: The amount of glucose in the urine was 2.25 per cent. Treatment: Milk diet and calcium eosolicum, 0.3 gm. three times daily.

June 2: Traces of glucose; treatment continued.

June 16: Glucose absent; treatment continued.

June 25: Traces of glucose. Treatment: Moderate, mixed diet, calcium eosolicum, 0.4 gm. thrice daily.

July 6: Glucose present—0.25 per cent. Treatment: Diet continued; calcium eosolicum, 0.5 gm. thrice daily.

July 14: Traces of glucose; diet continued, with calcium eosolicum, 0.5 gm. four times a day.

July 28: Traces of glucose, strict proteid nutriment; calcium eosolicum as before.

August 2: No glucose; milk diet; calcium eosolicum dispensed with.

August 6: No glucose; moderate mixed diet; no medication.

The patient, without further medication, continued fairly well, until the end of September, when she was taken with **endocarditis to which she succumbed on October 3.**

CASE 2.—Mrs. G., aged 47, German, had had the disease five years.

June 1, 1898: Under a diet largely albuminous, her weight was 72.5 kilog. The sp. gr. of the urine was 1026.5, glucose 2 per cent. Treatment: The same diet, of sufficient caloric value, was continued, and calcium eosolicum, 0.3 gm. three times daily.

June 6: Weight 73 kilog. The urine showed a sp. gr. of 1024, and glucose 1.75 per cent.

June 11: Weight 74 kilog., with sp. gr. of 1024, glucose 1.15 per cent.

June 19: Weight 74.75 kilog., urine's sp. gr. 1021.5, glucose 1 per cent. Treatment: Same diet continued; calcium eosolicum, 0.5 gm. three times a day.

August 12: Weight 76 kilog.; the urine showed a sp. gr. of 1017, and traces of glucose.

August 25: Weight 77.5 kilog.; sp. gr. of the urine 1019, and no glucose.

September 16: Weight 80.125 kilog.; sp. gr. of the urine 1019, with no glucose. The medicine was withdrawn.

CASE 3.—Mrs. W., aged 53, German, presented herself, but the duration of the disease was unknown.

July 22, 1898: Weight was 98 kilog. The diet was unrestricted, contrary to the advice of the family physician. The urine presented a sp. gr. of 1034, glucose 3.02 per cent. Treatment: Absolute proteid nourishment; hydrargyrum chloridum mite, 0.005 gm. every two hours.

July 24: Weight 97.5 kilog.; urine's sp. gr. 1028, glucose 2.1 per cent.

July 30: Weight 95.75 kilog.; sp. gr. of urine 1029.5, glucose 1.2 per cent. Treatment: Diet as above; calcium eosolicum, 0.4 gm. four times daily.

August 6: Weight 96.5 kilog.; sp. gr. of urine 1026, glucose 0.45 per cent.

August 13: Weight 96.5 kilog. The urine showed a sp. gr. of 1026, and traces of glucose. Treatment: Proteid diet, 100 gm. of carbohydrates allowed for the twenty-four hours, and the medicine continued.

September 16: Weight 96 kilog.; sp. gr. of urine 1023.5, and traces of glucose. The medicine was withdrawn.

CASE 4.—Mrs. S., aged 64, Hebrew, the duration of the disease three years, was in charge of her family physician.

Aug. 5, 1898: Urine, glucose 0.2 per cent, serum albumin in appreciable quantity, acetone present. Treatment: Dietary, milk; medicinally, calcium eosolicum, 0.3 gm. three times a day.

August 6: Urine showed no glucose, serum albumin in appreciable quantity, and traces of acetone.

August 8 and 9: Urine showed no glucose, nor serum albumin and no acetone. Diet and medicine were continued for some time afterward.

CASE 5.—Mrs. R., aged 47, Hebrew, apparently had alimentary diabetes of short duration.

Oct. 14, 1898: Urine presented a sp. gr. of 1019.5, glucose 0.5 per cent.

October 15: Urine's sp. gr. 1022, glucose 0.45 per cent. Treatment: Milk regimen; calcium esolicum, 0.35 gm. three times a day.

October 20: Urine's sp. gr. 1021, glucose, 0.2 per cent.

November 1: Urine's sp. gr. 1022.5, with traces of glucose. Treatment discontinued.

CHRONIC ULCERATIVE PHTHISIS.

The action of calcium eosolicum in ten cases of this affection which were under my observation, during the course of the year, is recorded in the following:

CASE 1.—M. C. G., aged 26, female, single, American. The disease was first recognized 2½ years previously.

May 28, 1898: Patient having just returned from a sanatorium, weight 56 kilog., axillary temperature, 4 p.m., 38.1 C. (100.5 F.). The disease was unilateral; coughing and expectorating moderately; tubercle bacilli in the sputum; heart's action full and accelerated; complaints of drenching perspiration, of great weakness—patient hardly able to walk—but of little pain. Treatment: Overalimentation; calcium eosolicum, 0.5 gm. every three hours.

June 1: Weight 55.5 kilog., temperature (axilla), 6 p.m., 37.8 C. (100 F.); feels much stronger.

June 4: Weight 56.25 kilog., temperature (axilla), 4 p.m., 37.8 C. (100 F.); feels stronger. Treatment: Diet as above; fresh air; sun baths; calcium eosolicum, 0.6 gm. every three hours.

June 12: Weight 57.5 kilog., temperature (axilla), 3:30 p.m., 37.2 C. (99 F.).

June 18: Weight 58 kilog., temperature (axilla), 4 p.m., 37.2 C. (99 F.); feels comfortable. Treatment: Diet, etc., as above; calcium eosolicum, 0.7 gm. every three hours.

June 25: Weight 58.25 kilog., temperature (axilla) 37.2 C. (99 F.); no cough; little perspiration; tubercle bacilli in the sputum.

The patient insisted on going home (Maryland); discharged—improving. When heard from last, improvement persisted. The large doses of this salt of eosol, averaging for the last week 4.2 gm. daily, were very well borne by the patient.

CASE 2.—M. M. D., aged 24, a female, married, Irish. The disease was first recognized six months previously.

May 30, 1898: Weight 54 kilog., temperature (axilla), 3 p.m., 38.9 C. (102 F.); adhesions of pleura; constant pain beneath left scapula; dulness in left clavicle region; cavities at the apex; cough loose, expectoration, grayish-purulent; tubercle bacilli in sputum; nocturnal perspiration. Treatment: Overalimentation (milk and fats); fresh air.

R.	Calcii eosolici	7|5
	Aquæ font	50|
	Extracti hyoscyami fluidi	2|
	Syr. pruni virginianæ	60|
	Glycerini q. s. ad	150|

M. Sig. A teaspoonful every three hours.

June 8: Weight 55.5 kilog., temperature (axilla), 3 p.m., 38.3 C. (101 F.)

June 13: Weight 56 kilog., temperature (axilla), 3 p.m., 38.3 C. (101 F.)

June 20: Weight 57 kilog., temperature (axilla), 2:30 p.m., 37.8 C. (100 F.)

June 28: Weight 57.75 kilog., temperature (axilla), 3 p.m., 37.2 C. (99 F.). Treatment: Mixed diet, milk in abundance; mist. calcii eosol. as above. Teaspoonful three times daily.

July 22: Weight 60.5 kilog., temperature (axilla), 4 p.m., 37.2 C. (99 F.). Treatment: Mixed diet, milk in abundance; as above; teaspoonful twice daily.

September 16: Weight 64 kilog., temperature (axilla), 3:30 p.m., 37.2 C. (99 F.). Treatment as above; to continue medicine twice daily for two months.

March 8, 1899: Weight 66.5 kilog.; temperature (oxilla) 6 p.m., 37.2 C. (99 F.); no pain; very little cough and expectoration; no tubercle bacilli in sputum; no nocturnal perspiration.

CASE 3.—M. T. B., aged 37, male, German, the disease was first recognized in December, 1897.

June 5, 1898: Weight 81 kilog., rectal temperature 38.5 C (101.3 F.); disease fully developed; tubercle bacilli in sputum; pallor exilmius; marked adynamia. Treatment: Forced feeding; 6 liters of milk per day; sun baths; lung gymnastics; calcium eosolicum, 0.3 gm. tablets, 3 per day.

June 19: Weight 80 kilog., rectal temperature 38.3 C. (101 F.). Treatment: As above; calcium eosolicum, 0.3 gm. tablets, five per day.

July 1: Weight 81.5 kilog., rectal temperature 37.1 C. (98.8 F.)

July 14: Weight 83 kilog., rectal temperature 37.7 C. (99.9 F.)

September 6: Weight 85.75 kilog., rectal temperature 37.2 C. (99 F.); patient discontinued treatment.

December 27: Attack of la grippe; rectal temperature 40 C. (104 F.); acute affection lasting three weeks.

Feb. 3, 1899: Weight 79 kilog., rectal temperature 37.5 C. (99.5 F.) Treatment: As above.

R.	Heroin	0	15
	Calcii eosolici	8	
	Aquæ	50	
	Syr. tolutani		
	Glycerini, āā	60	

M. Sig. A teaspoonful every three hours.

February 7: Weight 79.25 kilog., dyspeptic symptoms. Treatment: Diet as above; mixture discontinued, instead of it:

R.	Calcii eosolici		
	Natrii bicarbonici, āā	0	3
	Carbo animalis purificatus	0	75

Ft. pulv. d. tal. dos. triginta. Sig. One powder four times daily.

February 14: Weight 81 kilog., temperature (axilla), 37.1 C. (98.8 F.); dyspeptic symptoms subsiding.

February 22: Weight 82.5 kilog., temperature (axilla), 37 C. (98.6 F.)

March 1: Weight 84.25 kilog., temperature normal.

March 10: Weight 85 kilog., temperature normal.

May 4: Weight 88.5 kilog., temperature normal; medication discontinued.

Calcium eosolicum, plain, tended to purge the patient. Together with syrup and glycerin, in the form of a cough mixture, indigestion followed its administration; combined with bicarbonate of soda and animal charcoal, it caused no unpleasant effects.

CASE 4.—T. T., aged 34, male, American, with duration of disease unknown, probably nine months.

June 5: Weight 77 kilog., temperature (axilla), 6 p.m., 37.8 C. (100 F.); physical signs of local disease very pronounced; hectic condition; asthenia, cough and expectoration loose; no tubercle bacilli in sputum. Treatment: Absolute milk regimen, starting with 4 liters a day; to spend twelve hours in bed, and the rest of the day in the open air; calcium eosolicum, 0.3 gm. four times daily.

June 17: Weight 78.75 kilog., temperature (axilla), 6 p.m., 37.2 C. (99 F.) Treatment: Diet, 5 liters of milk daily; calcium eosolicum, 0.3 gm. three times daily.

July 3: Weight 81 kilog., temperature (axilla), 11 a.m., normal. Treatment: Diet, 6 liters of milk daily; medicine as above.

July 25: Weight 84.5 kilog., temperature normal; asthenia and hectic condition greatly improved; very little cough and expectoration; discharged; improved.

The daily dose of calcium eosolicum had to be somewhat reduced in the course of treatment on account of the loose bowels of the patient.

CASE 5.—S. K., aged 32, female, American, presented, the duration of the disease five months.

June 11, 1898: Weight 61.5 kilog., temperature (axilla), 37.9 C. (100.3 F.); apical disease very marked; cavity formation on both sides; cough aggravated; expectoration profuse and purulent; great debility; nocturnal perspiration profuse and extremely exhausting; bacillus tuberculosis in sputum. Treatment: Overalimentation; salad oil, full cream pancreatin; calcium eosolicum, 0.3 gm. every three hours.

June 16: Weight 60.75 kilog., temperature (axilla), 38.3 C. (101 F.)

June 23: Weight 60 kilog., temperature (axilla), 37.5 C. (99.5 F.)

June 29: Weight 60 kilog., temperature 37.8 C. (100 F.)

Calcium eosolicum had to be withdrawn as the patient seemed to be idiosyncratic against it.

CASE 6.—M. F., aged 44, male, Austrian; the duration of the disease 2½ years, presented himself.

July 6, 1898: Weight 54 kilog., rectal temperature, 11:30 a.m., 38.5 C. (101.3 F.); disease far progressed; pulse very weak and frequent; edema of feet; dyspnea; pronounced hectic condition; asthenia; bacillus tuberculosis in sputum. Treatment: Mixed diet; olive-oil subcutaneously. strychnia internally; calcium eosolicum, 0.3 gm. three times a day.

July 7: Weight 54 kilog., rectal temperature, 4 p.m., 38.9 C. (102 F.)

July 8: Weight 54 kilog., rectal temperature 38.3 C. (101 F.)

July 10: Weight 53.75 kilog., rectal temperature 37.7 C. (99.9 F.); treatment discontinued; patient insisted on going to Colorado at once.

CASE 7.—D. T., aged 59, male, German; the duration of the disease as three years.

August 14, 1898: Weight 52.5 kilog., rectal temperature 37.8 C. (100 F.); repeated attacks of hemoptysis from excavation; cough loose; expectoration profuse; diarrhea; pronounced adynamia; tubecle bacilli in sputum. Treatment: Overalimentation; hypodermic injections of strychnia; calcium eosolicum, 0.3 gm. three times a day.

August 21: Weight 53 kilog., rectal temperature 37.7 C. (99.9 F.) Treatment: As above; calcium eosolicum, 0.4 gm. thrice daily, combined with sodium bicarbonate and charcoal.

August 28: Weight 54 kilog., rectal temperature 37.8 C. (100 F.)

September 4: Weight 54 kilog., rectal temperature 37.7 C. (99.9 F.)

September 6: Weight 53.5 kilog., rectal temperature 37.2 C. (99 F.) Treatment: As above; calcium eosolicum, 0.3 gm. twice daily.

September 8: The medicine was discontinued as the diarrhea seemed to increase under its administration, greatly weakening the patient.

CASE 8.—M. J. G., aged 33 female, married, American. The duration of the disease was 1½ years.

December 23, 1898: All symptoms characteristic of the disease were present, including tubercle bacilli; both lungs affected; temperature (axilla) 39.2 C. (102.5 F.) Treatment: Milk regimen; calcium eosolicum, 0.3 gm. three times a day with sodium bicarbonate.

December 28: Temperature (axilla), 37.5 C. (99.5 F.)

December 30: Temperature (axilla) 37.7 C. (99.9 F.)

Jan. 5, 1899: Temperature (axilla) 37 C. (98.6 F.)

January 16: Weight 55.5 kilog., temperature (axilla) 37.2.

R.	Calcii eosolici	5	
	Aquæ	35	
	Ext. lobeliæ infl. fl	0	5
	Aquæ anisi, q. s., ad	100	

M. Sig. A teaspoonful every three hours.

January 27: Weight 56.25 kilog., temperature (axilla) 37.1 C. (98.8 F.)

March 1: Weight 59 kilog., temperature (axilla) 37.2 C. (99 F.)

CASE 9.—F. U., aged 31, female, married, American; duration of disease 10 months.

Jan. 10, 1899: Disease well pronounced; thickening of pleura; cough very persistent; expectoration scanty; tubercle bacilli in sputum; temperature (axilla) 38.3 C. (101 F.); urine contains serum albumin, but no casts. Treatment: Milk diet.

R.	Calcii eosolici	10	
	Aquæ	70	
	Natrii benzoici	20	
	Syr. tolutani		
	Aquæ camphoræ, āā	75	

M. Sig. A teaspoonful every two hours.

January 11: Cough looser; temperature (axilla) 37.5 C. (99.5 F.)

January 12: Cough looser; expectoration increased; temperature (axilla) 37.6 C. (99.7 F.)

January 15: Cough and expectoration loose; temperature (axilla) 37.3 C. (99.1 F.)

January 20: General condition much improved.

February 4: Weight 65.75 kilog., temperature (axilla) normal. Treatment: Overalimentation with milk; calcium eosolicum, 0.3 gm. four times daily.

February 7: Weight 66.25 kilog., temperature normal.

February 11: Weight 67 kilog., temperature normal.

February 24: Weight 69.25 kilog., temperature normal.

March 3: Weight 70.5 kilog., temperature normal; symptoms in general relieved; patient feels very comfortable. Treatment: As above; calcium eosolicum, 0.3 gm. twice daily.

May 6: Weight 76 kilog., temperature normal; shallow and labored breathing; bronchial rales, somewhat crackling; very little cough and expectoration; no tubercle bacilli.

CASE 10.—M. N. M., aged 41, male, German. The disease was first recognized about two years previously.

Jan. 21, 1899: Weight 60 kilog., temperature (axilla) normal; pain over scapulæ; dyspeptic symptoms; infiltration of apices; cough persistent; expectoration mucopurulent, occasionally containing minute particles of blood; tubercle bacilli in sputum; drenching night sweats; emaciation; asthenia. Treatment: Milk diet, 200 c. c. every 1¾ hours; to facilitate digestion, sodium bicarbonate, nux vomica and hydrastis combined; calcium eosolicum, 0.3 gm. in capsules four times daily.

January 25: Weight 60.75 kilog., temperature normal.

January 31: Weight 62 kilog., temperature normal; patient removed to Baltimore, whence he reported improvement in March.

NEPHRITIS.

My observations as to the therapeutic usefulness of calcium eosolicum in the various forms of nephritis are very limited. Only of late have I started to employ this sulphocreosote salt in renal affections. As my cases are not long enough under the influence of this drug, I am not enabled to give any definite data at this early date.

A study of the clinical reports tends to demonstrate at once that this sulphocreosote derivative can be administered for long periods without effecting gastric or intestinal disturbances. It was well borne in nearly every instance, even in well-advanced cases, and also where dyspeptic and other symptoms of alimentary difficulty prevailed.

The medicinal action of calcium eosolicum seems to depend on the first instance in its neutralizing qualities, which others may be tempted to call "antiseptic" or "germicidal." I doubt, however, the propriety of classifying calcium eosolicum as a germicide in the strict sense of the meaning; it does not destroy germs or micro-organisms, but it apparently effects a condition of the system, especially of the fluids, which is averse to bacterial growth. If it is potent in the destruction of the already formed toxic products of bacterial life, I can not say, but I maintain that the eosolate of calcium besides its apparent neutralizing power just mentioned, is a positve and harmless neutralizer of a number of toxic substances of non-bacterial origin.

All the other medicinal qualities of calcium eosolicum seem to depend more or less on its action as a neutralizer and are therefore secondary to the latter. Its antipyretic, analgesic, emolient, stimulating, tonic and restorative properties—sufficiently demonstrated by this report—seem to be nothing else but mere enunciations of its neutralizing force.

Vaginal Irrigation for Leucorrhea.

R. Potassii chloratis.....12 parts
Vini opii.....10 parts
Aquæ picis.....300 parts
M. Sig. Add 3ii-iii to a quart of warm water.—*Lutaud.*

CREMATION.*

BY ROBERT MARSENA STONE, A.M., M.D.
OMAHA, NEB.

A study of the customs of civilized nations of this and many past generations shows that we have blindly accepted one custom and followed it for indefinite years, without much question. It is that of the disposition of our dead. Long-accepted custom has decreed that earth-burial is proper, and we have accepted it. Once in a great while we experience a rude shock as we learn of an event that took place in Cuba during the late war—the necessary saturation of the bodies of the victims of yellow fever with oil, and their burning on vast pyres because the sanitation of a city demanded it—but we lapse into reacceptance of the old custom and continue to think earth-burial the only procedure for ordinary death. Few men care to think and reason about such matters until forced by the presence of grim death, and then grief holds sway and the time for dispassionate thought has passed.

This particular study and address is due to a discussion of the general question of the disposition of the dead apart from any personal interest. It arises from a query presented: "Is it best that we bury our dead?" "Is there good reason for a custom so long established, so well settled, so thoroughly accepted by the civilized world?" Is there any good reason why some other method of disposition should be adopted?" And still another question is put, and to the physician this is the hardest of all: "Do the living suffer harm by reason of the almost universal custom of earth-burial?" Still another: "Are these few of whom we occasionally hear, who cremate their dead, fanatics, who without good reason have adopted that method, or are they wiser than the masses, have a deeper love for their fellows, an unwillingness to see them harmed, and have they as tender affections and sentiments as the rest of humanity?"

One of the noblest sentiments, the possession of which is characteristic of the civilized nations of the world, is that of a reverence for the dead which impels us to honor them after death, to erect monuments to perpetuate their memory, to beautify the places of interment, the cemeteries, and to regard as holy and sacred the particular spot selected for the last resting-place of one's own dead, to be kept beautiful by constant care and by adornment by flowers. This sentiment is most deeply rooted in the innermost recesses of the hearts of the best people of all cultured lands. The custom of acting on this sentiment can never be changed until we learn that the presence of the urns containing the ashes of our most loved ones renders the chamber in which they are placed, in our own houses, or the columbaria in a cemetery, equally sacred places for communion, for reflection on the virtues of the dead, places to be beautified with flowers as the graves now are and having the advantage over them, especially when they are in one's own home, of constant access, regardless of weather or ill health.

I am firmly convinced that this substitution of sentiment, from the grave to the urn, this recognition that the urn with its ashes renders its home sacred, will sooner or later be accepted and will result in the transfer of our holy regard from the grave to the urn, also, beautified with constantly changed flowers, and result in the adoption of cremation by thinking, cultured people of all communities.

*Presented to the Section on State Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

METHODS OF DISPOSITION OF THE DEAD.

A careful study of the various methods practiced by different nations, ancient and modern, shows that there are many more than one would, on slight reflection, think possible. The Colchians and Phrygians, and some tribes of our American Indians dispose of their dead by exposure on platforms erected on the tops of tall poles. The Syrcanians abandoned theirs to wild dogs. The Ethiopians threw theirs into water to be devoured by aquatic animals. The Parsees, as far back as 400 B. C., exposed their deceased friends on high gratings, called "towers of silence," where birds of prey fed on the remains. In India it is the custom to place the bodies on a stone slab on the top of a high hill. The vultures pick the bones clean of flesh, after which the friends secure the skeleton. The Hindus in some cases lay the body on the bank of a river for the crocodiles to devour, and some of the Kaffir tribes remove their dead into the bush for the wild beasts.

Maritime nations have often been in the habit of sending dead bodies out to sea for burial, just as now when death occurs at sea. The aborigines of the Chatham Islands have a peculiar custom: When a fisherman dies they place his body in a boat, well lashed to its sides, place a baited fish-rod in his hand, and set the boat adrift. Attempts have been made to petrify bodies and preserve them from decay, but without success. The Peruvians also have a strange custom: They make a sun-dried coffin of earthen material and place the body in it. These coffins are then piled into mounds called *Huacas,* one of them being large enough to measure 14,500,000 cubic feet. They resist decay in a most wonderful manner.

The primeval races used the caverns once inhabited by beasts for their dead. The Persians hewed out holes in the solid mountains, for the same purpose. The Inguishes of the Caucasus bury in vaults of masonry. The Chinese practice earth-burial, but not in a cemetery. They inter wherever fancy dictates, by the roadside, in unenclosed spots, etc.

The Egyptians embalmed their dead from the remotest times. Their belief in the transmigration of souls and their return after 3000 years was no doubt the real reason for this practice.

One of the South Australian tribes places its dead in a sitting posture near the top of a hut, and keeps up fires until the body is dried, when it is bandaged and hidden among the branches of a tree.

In Japan, the Ainos dispose of a dead chief in a peculiar manner: They remove the viscera and wash the body daily in the sun for a year. They then coffin it and bury it. Dr. Livingston's body was similarly treated.

That cremation was practiced in ancient times is certain. The Chinese and Jews, of the ancients, are the only peoples who did not practice it. The Burmese cremate the Buddhist priests in a strange manner: They embalm the body in honey, lay it in state for a time, and then blow up with gunpowder both the body and the hearse. It is a matter of history that the Roman emperor, Galba, was murdered at the same time as Piso Licinianus and their heads taken to Otho. The widow of Piso bought her husband's body and had it cremated. The ashes were placed in a marble cippus in the family tomb. In 1885 this very tomb was discovered and the cippus found with ashes intact. Whatever the practice or method of the ancients, or however much they practiced cremation, the custom fell into disuse and earth-burial took its place. During all the ages all cities have had the same experience. Burial spots have been chosen when the population was small, in a district not far removed from the city. The population has increased, the city has at last reached beyond the plot of the cemetery, which has become full to overflowing, is no longer a pleasant and desirable spot, and is abandoned; those interested in its preservation have died and no one longer cares for it. The city needs the ground for parks or playgrounds for school children, and absorbs it, and the bones are dug up without protest and the monuments used for making a roadway. This is a common history and has been true even in this very young city of Omaha.

In districts where the undersoil is of clay "hardpan," and it is impossible for the fluids to soak down, or in districts like New Orleans, La., where the water reaches to the surface, rendering earth-burial impossible, the conditions are at their worst. Sir Henry Thompson aptly said, in 1874: "No dead body is ever placed in the soil without polluting the earth, the air and the water above and around it."

Pasteur showed that earth-worms had carried to the surface, twelve years after death of an animal from splenic fever, the germs of the fever which brought about a new outbreak of the disease. Professor Selmi, the great Italian, proved that the common constituents of the body, brain, blood and fibrin, are converted by decomposition into most virulent ptomains. Freire of Rio Janeiro proved that the soil of the cemeteries in which yellow fever victims had been interred teemed with micro-organisms identical with those found in the vomit and blood of yellow fever victims. These and other scientific observers have established without any question the proposition that earth-burial not only pollutes earth, air and water, causing diseases of various forms, and even the very specific infectious and contagious diseases from which the dead met their death.

A few instances of English cases will show the matter in its most horrible light. Dr. Quirke reported, in 1889, that he found the grave-diggers at work digging through the remains of persons formerly interred there; the coffins and putrid remains soon sank into the water as they got deeper and they baled the water out, throwing it over the graves near by. During the disgusting process a pestilential stench was wafted through the graveyard, infecting the air. Lord Bessborough, to whom the Doctor was reporting, said that he saw in the same cemetery a coffin held down with a spade during burial to keep it from floating. He naively suggested that some sort of a filtering tank should be used to filter the water that oozed from the graveyard before the people used it for drinking purposes. Minchinhampton was decimated by a disease caused by the use of a fertilizer used on the gardens of the town, which was the rich soil of an abandoned graveyard. The epidemic of cholera in London in 1854 was thought to be due to the upturning of the soil where the cholera victims of 1665 were buried, and there is no longer room for discussion as to the great danger from the use of water of wells infected by drainage from a cemetery near by.

Dr. S. D. Gross thus wrote of "Burial, a Horrible Practice:" "If people could see the human body after the process of decomposition sets in, which is as soon as the vital spark ceases to exist, they would not want to be buried; they would be in favor of cremation. If they could go into a dissecting-room and see the horrid sights of the dissecting-table, they would not wish to be buried. Burying the human body, I think, is a horrible thing. If more was known about the human frame while undergoing decomposition, people would turn with horror from the custom of burying their dead. It sometimes

takes a human body fifty, sixty, eighty years—yes, longer than that—to decay. Think of it! The remains of a friend lying under six feet of ground, or less, for that length of time, going through the slow stages of decay, and other bodies all this time being buried around these remains. Infants grow up and pass into manhood or womanhood, grow old and get near the door of death; and during all that time the body which was buried in their infancy lies a few feet under ground in this sickening state, undergoing the slow process of decay. Think of thousands of such bodies crowded into a few acres of ground, and then reflect that these graves, or many of them, in time fill with water and that water percolates through the ground and mixes with the springs and wells and rivers which furnish the water we drink. Why, if people knew what physicians know, what they have learned in the dissecting-room, they would look upon burning the human body as a beautiful art in comparison with burying it. There is something eminently repulsive to me about the idea of lying a few feet under ground for a century, or perhaps two centuries, going through the process of decomposition. When I die I want my body to be burned. Any unprejudiced mind needs but little time to reflect in forming a conclusion as to which is the better method of disposing of the body. Common sense and reason proclaim in favor of cremation. There is no reason for keeping up the burial custom, but many against it, some of the most practical of which are but too recently developed to need mention. There is nothing repulsive in the idea of cremation. People's prejudice is the only opponent it has. If they could be awakened to a sense of the horror of crowding thousands of bodies under the ground, to pollute, in many instances, the air we breathe and the water we drink, their prejudice would be overcome. Cremation would be taken for what it truly is, a beautiful method of disposing of the body."

Nothing better can be found to show the utter disregard of sanitary precautions than the following quotation from the official proposal of the Kensal Green Cemetery Company in England: "It has been found that seven acres will contain 133,500 graves; each grave will contain ten coffins; thus, accommodations will be found in the seven acres for 1,335,000 deceased paupers." And the English government would not listen to the board of health and permitted this to be inaugurated.

The Battersea Cemetery Company, being short of room, permitted graves to be dug deep enough to hold the coffins of fourteen adults or twenty-six children. The percolation of water into these common graves produced decomposition before the fourteenth or twenty-sixth was buried. The emanations from the open graves during burial, after the first or second, seriously endangered the health of the clergyman and mourners.

The death-rate of London in 1872 was nearly 77,000. This gave not less than a million of festering bodies in all stages of dissolution in and around the city at that time. These figures are appalling to us who live in a less closely packed district.

Sir Spencer Wells, in an address in favor of cremation, called especial attention to the great danger to the living of burials in such churches as Saint Paul's and Westminster Abbey. He said: "The late Lord Mayor was left in Saint Paul's to slow decay, dangerous it must be to successive congregations. Think what our ancient churches might be if, instead of the coffins and their corrupting contents—sources of danger to the living—we had the ashes only arranged in vases and urns."

Various objections have been urged against cremation. The most puerile is that it destroys all evidence of poison and may often hide a murder. No one can deny that this might happen. To prevent it as much as possible, the greatest care is taken that all bodies are accompanied by certificates from regular boards of health. The escape of a murderer from punishment because the evidence of his crime has been burned is of slight importance beside that of the danger of earth-burial to the living. In many crematories much more exact certificates as to death having been due to well-known causes are required, and signed by two medical men. In all cases of doubt a post-mortem must be had.

The religious objection was at first very pronounced. Many of the clergy called cremation irreligious, heathenish and pagan. Such objections are no longer heard. On the contrary, most eminent religious men are now the strongest advocates of the practice. The Bishop of Lincoln has said: "Only weak-minded brethren might have their belief shaken in the doctrine of the resurrection." Lord Shaftesbury said: "What an audacious limitation of the power of the Almighty! What has become of the blessed martyrs who were burned at the stake." Canon Liddon said: "The resurrection of a body from its ashes is not a greater miracle than the resurrection of an unburnt body." Father Buccelatti, a professor of theology, wrote to Professor Polli: "You ask me in what relation cremation stands to religion. As a reasoning Catholic, free from prejudice, I openly declare that cremation is not inconsistent with the teachings of religion." Right Rev. Phillips Brooks said: "I believe there are no true objections to cremation." Rev. Heber Newton said: "The religious objection has always seemed nonsensical. Nothing but the stupid blind prejudice of a blind orthodoxy could allow any notion of a religious objection to have weight."

Catholic Italy has to-day more adherents of cremation than any other nation, and Milan and Rome have two of the most imposing crematories of the world.

Slight objection has been made that the parting with our loved ones, knowing that the next moment will see them consigned to the furnace, will prove a greater source of anguish than to see them lowered into the open grave and to hear the earth fall on the coffin. Earth has no greater anguish than the last sight of the dearest face on earth to us, but if there can be any difference, it seems to me that the placing a loved one in a cold, damp, lonesome grave to rot, would be far the greater.

WHAT IS CREMATION AND HOW IS IT PERFORMED?

The Hindus still practice it in its simplest form. One of their crematories, called *Ghats,* is located on the River Hoogly. On the earth floor are placed three tiers of logs at right angles. Upon these the body is placed. The elbow, wrist, knee and ankle joints are then broken and the arms placed under the body. Three more tiers of logs are placed on the body and live coals put beneath. An oil, called *ghee,* is thrown over the body, which is soon consumed. The expense is about $1.75. Incidentally I may add, another custom of most horrible character is also carried out at these *Ghats.* The sick are daily brought to the river bank near. The mud of the river bank is put in the mouth, eyes, nose and ears of the sick one and he is shaken till suffocated. He is then placed again on the cot, and the cot held under the water until all signs of life are gone, when the body is taken into the *Ghat* and cremated.

This method of the Hindus, the pyre, was probably the only one in use among the ancients, and was probably practiced up to the close of the third century. From the fourth to the middle of the sixteenth century no

mention of cremation is to be found in literature. The crowding of the cemeteries around Paris, about the time of the French Revolution, had brought up the subject of cremation, but without any practical result, though investigated by the French Government. Just prior to 1882 Byron and Shelley promised that the survivor should cremate the one who died first. They expected great opposition both from the government and the people. In 1822 Shelley and a companion, Williams, were drowned in the Ligurian Sea near Leghorn, Italy. The quarantine laws ordained that all waste material drifting in from the sea should be burned. Byron was thus enjoined by the law to carry out that which he had promised. He did so with the assistance of Leigh Hunt and Edward John Trelawny. The cremation of these well-known men attracted public attention. The noxious effects of earth-burial were freely discussed, but the open-pyre method of cremation was not approved.

The discussion then reached this country, for Henry Laurens, a friend of General Washington, at one time on his staff, and the first President of the American Congress, was cremated in North Carolina.

This was probably the first cremation in America. About 1876 Dr. Julius Le Moyne became so much interested in the question that he erected a crematory at Washington, Pa., in which the body of Baron de Palm was cremated in 1877. This was the first of modern cremations in America, with methods fairly similar to those now used. The Italians began modern cremation in the year prior, 1876.

In the earlier crematories the body was placed in a clay crucible, shaped like the body; it had a cover which was perforated for the escape of the gases. The heated air alone touched the body; there was neither fire nor flame. In the later ones flame is admitted to the bodies since, as Professor Richards of the Massachusetts Institute of Technology has said: "A body can not be reduced to ashes without flame." "The retorts must admit oxygen else the carbon could not be consumed."

All modern crematories have a chapel connected with them. They are of beautiful architectural design, handsomely furnished and adorned with flowers and foliage plants in profusion. Some have an organ, so that a full religious service may be held if desired.

The body is placed on a catafalque in the chapel. Any service desired is held. The catafalque is the floor of an elevator, and at the proper moment in the service the elevator with the body noiselessly descends, carrying the body to the door of the furnace. The family and friends remain in the chapel. The retorts have been previously heated. The opening of the furnace doors to admit the body cools the retort down to a cherry-red. The body is wrapped in a wet alum sheet, previously applied. The carriage rolls into the retort and, by a mechanical arrangement, the body is lowered to its floor and the carriage withdrawn. The first effect of the heat is to cause a fine mist like dense snow or fog to rise; this continues till the soft tissues are reduced to ashes; then the retort rises about six inches above the body. This continues till the bony structures are reduced to ashes, the oxid of lime, most beautiful and white, much of it lace-like in appearance. The ashes of the clothing and the coffin, if that is burned, as it is in some places, are so fine and light that they have gone up the chimney during the process. In some places they allow the coffin to be removed, if the death was not from an infectious or contagious disease, and given to a hospital to be used for some worthy poor person for whom earth-burial is desired. A body of average weight, 140 or 150 pounds, is cremated in about 90 to 120 minutes. The cooling of the ashes and furnace requires from two to four hours longer, though it is not usually possible to secure the ashes for twenty-four hours. The ashes are given to the friends in a copper box 5⅛ inches square and 4 broad. It is hermetically sealed and the name of the person placed on the sealing ribbon.

For the permanent care of the ashes urns of various simple and artistic designs are made. They are modeled after the urns found in ancient ruins, and made of all materials, terra cotta, copper, bronze, marble and porphyry.

In connection with crematories are found columbaria. Many people do not wish to keep, or are situated in such a manner that they can not keep, their urns in their own houses. For such the columbarium has been built. The one in San Francisco is the most ornate and expensive in the United States. It is original and unique in design, of classic architecture, and contains over 4000 niches for the reception of urns. The columbarium is really a cemetery of urns. The niches are of various sizes, some for the reception of but one urn; some for two and some for several; in fact, enough for those of a whole family. The fronts of the niches are of plate glass, marble or bronze as desired. The cost of niches in the columbariun varies from $10 for a single niche on the second floor, to $500 or $800 for one on the main floor with a memorial window. The cost covers perpetual care as well. Each niche has a flower holder. In comparison with the amount of space required for earth-burial, it is said that columbaria, capable of caring for 20,000,000, could be placed in grounds of but twenty acres.

WHAT DOES CREMATION ACCOMPLISH?

First and most important of all, it does away with the harm and injury arising from the pollution of the air, earth and water by the decomposing bodies of the dead. Death is no longer a menace to the living. The possibility of burial alive which, rightly or wrongly, is a constant terror to many, is obviated. With cremation there is no grave to be robbed and no possibility of scandal as there was, with reference to the alleged attempts to rob the graves of A. T. Stewart, Lincoln and Garfield. To the masses, the question of expense is a most vital question in the disposition of the dead. Reverence, or respect for the dead, as we so often hear the sentiment called, is a profound one found in a high degree in all parts of America. I regret to say that among the masses in this country it has ceased to be a true reverence for the dead, and has become too often a matter of display and ostentation on funeral occasions. Pride, vanity and a desire to escape the criticism of being called mean and stingy in such a case, lead people of very moderate means to far exceed their resources.

While the funerals of senators and congressmen are wildly extravagant, because the government purse is deep and Washington embalmers are greedy, the funerals of the rich are not nearly so much so as those of the poor. This is the universal testimony of the undertakers. The poor seem to think that a funeral of moderate expense shows an utter lack of respect for the dead. The body must be embalmed at a cost of $25; an expensive coffin costing from $40 to $75 used; the family must have mourning garments; a lot must be purchased at a cost of $25 or more, and carriages must be provided in large numbers. So it comes about that the death of a mother in a family of a day-laborer whose income has never exceeded $500 a year is followed by a funeral which costs from $100 to $150, and deprives

the family of all comforts and many necessaries for many months. I myself recall a funeral of a husband, who earned $500 or $600 a year, which cost over $200, in which a brass band led the procession and the widow and children went home without a dollar in their house or a loaf of bread. She paid that bill by washing.

The disposition by cremation does not involve many of the expenses which belong to earth-burial. It is now possible in many of the large cities for the total expense from death until the return of the family to the house not to exceed $30 to $40. In non-contagious cases, the crematories will furnish the worthy poor a coffin for the service and transport the body to the crematory and cremate it for $30. The cost of cremation in San Francisco is $45, in Davenport, Iowa, $35, in Boston, $30, in St. Louis, Mo., Milwaukee, Wis., and Chicago, $25. In Milan it is $1.60.

With the positive knowledge that earth-burial of bodies dead from cholera, yellow fever, smallpox and similar diseases has been the means of starting a new epidemic after later disturbance of the bodies, there can be no question that cremation should be the only method of disposing of the bodies of those who die from infectious and contagious diseases.

In Japan cremation is practiced in about one-third of the deaths. A funeral pyre is built on the border of a river and the body burned, with wood as the fuel. After both body and fuel have been reduced to ashes, the immediate friends search among the ashes for a little pebble of crystal. This is preserved in a small shrine of glass mounted on wrought metal and enclosed in a tiny cabinet of lacquer of artistic design. The pebble is supposed to symbolize the spirit of the departed one. The ashes are allowed to be swept away by the rising waters of the river. Dr. J. R. Chadwick, of Boston, through whose courtesy I received this information, has five or six of these lacquer cabinets containing the pebbles of crystal inside their glass coverings. This unique custom idealizes the cremation even more than the preservation of the ashes.

Much has been said about cremation being a pagan practice, horrifying in its nature, one violating all the tender sentiments of the human mind, running counter to all proper ideas of reverence for the dead instilled from infancy. On the contrary, I firmly believe that nothing is so blindly destitute of reverence for the dead as the act of placing the body where it must putrefy. Nothing could be found more fitted to destroy all reverence for the dead or the slightest feeling of regard for them than familiarity with earth-burial as seen around London. We know to a certainty that rotting must take place; that worms must devour them; that snakes often make their nests in the coffins. We dare not think of them once after death as we really know they are, under ground, and it seems utter irreverence, a total disregard of all sacred ties for us to so place the bodies of our loved ones.

On the other hand, the surroundings of a crematory are of the highest. A beautiful chapel adorned with pictures and flowers is furnished. The solemn music of the organ is a part of the service, after which the body is noiselessly lowered from the chapel at the last moment, and is not again seen. This closing scene is much less harrowing than the lowering of the coffin into the open grave.

I have gathered a number of expressions as to cremation from an esthetic standpoint:

Rev. Joseph May says: "I am persuaded that cremation is esthetically even more attractive than burial. We can not let our imagination follow the remains of our dead if buried."

Julia Thomas says: "One has such a horror of rotting slowly. Who would not prefer the sweeter, swifter process of rosy heat."

Ella Wheeler Wilcox writes of burial and cremation as follows: "For those who have witnessed the ghastly spectacle of a modern funeral, no description of that barbarous rite is necessary. Who has not seen it all—the darkened room, stifling with its mingled odors of flowers and disinfectants; the sombre, hideous casket; the awful ceremony of screwing down the lid over the beloved face; the black army of pall-bearers; the long, slow, mournful journey to the desolate, disease-breeding cemetery; the damp, dark, yawning pit, the lowered coffin, the sickening thud of the earth as 'dust returns to dust.' Oh! could the most savage race invest death with more terrors than this frightful custom of the civilized world? Then follows the long process of decay, the darkness, the gloom, the weight of the earth upon that dear breast, the grave-worms slowly eating their slimy way into the flesh which has thrilled under our warm kisses—God! are we not cruel to our dead? Compare this with the beautiful ceremony of cremation. A snowy cloth envelops the dead. A door swings open noiselessly, and the iron cradle, with its burden clothed as for the nuptial bed, rolls through the aperture and disappears in a glory of crimson light, as a dove sails into the summer sunset skies and is lost to view. There is no smoke, no flame, no odor of any kind. Nothing comes in contact with the precious form we have loved but the purity of intense heat and the splendor of great light. In a few hours, swiftly, noiselessly, with no repulsive or ghastly features in the process, the earthly part of our dear one is reduced to a small heap of snowy ashes. All hail the dawn of a newer and higher civilization, which shall substitute the cleanliness and simplicity of cremation for the complicated and dreadful horrors of burial."

Kate Field, whose body was cremated in 1896, once wrote: "I believe cremation is not only the cleanest but the most poetical way of disposing of our dead."

Rev. Dr. Henderson said: "Rightly understood, cremation is the most rational, most esthetic and least repulsive method to surviving love."

Rev. E. B. Payne said: "The tongue of flame certainly seems more spiritual than the clod."

T. C. Williams wrote: "The grave, the tomb, are necessarily revolting to any imagination that looks beyond the surface."

Charles Francis Adams says: "Instead of seeking to prolong the process of decay by leaden caskets, marble boxes, and hermetically sealed vaults, we should seek to promote it by means known to science. As a matter of sentiment I fail to see why we should rather consign the remains of those we love to the tender mercies of worms than to the tender mercies of heat. There is nothing dreadful in the thought of cremation, but the other thought, that the form once dear to me lies for years rotting in the ground, a slowly wasting, hideous mass of putrefaction and that the ingenuity of man has been employed to prolong this terrible process, that thought *is* horrible."

Brooke Lambert said: "I have lost three very dear kinfolk in remote quarters of the earth. I would give everything I have if I could receive their ashes and keep them by me in a vase."

Frances Willard, whose body was cremated in Graceland, Chicago, said in her will: "I have the purpose to help forward progressive movements and decree that the

earthly mantle, which I shall drop ere long, shall be swiftly enfolded in flames and rendered powerless to affect, harmfully, the living. I stand for cremation even in death as I have sincerely meant in life to stand by the great cause of poor, oppressed humanity."

Mrs. Alice N. Lincoln, who had witnessed the cremation of some much loved one, said: "As we stood in silence watching the rosy glow which played over the white surface of the retort, a feeling came to me of awe, certainly, but also of peace and rest. There was something spiritual, elevating in the absolute purity of the intense heat; it seemed far less appalling and depressing than the blackness of an open grave."

And thus only may we rest in peace.

Continental Block.

DISCUSSION.

DR. C. F. ULRICH, Wheeling, W. Va.—I have been fighting for cremation for almost forty years. I have always said that if I can induce my relatives to cremate me when I am gone, I want them to do it. I have spoken of the sanitary view of it where I live for the last twenty-five years, and I tell them sometimes that if they had seen what I have seen they would change their views very quickly. Cremation is the most beautiful, the cleanest, and I might say the most esthetic way to dispose of the dead. This paper takes up this subject from every point of view, and I am glad that I was here to hear it. Some years ago I wrote an article on cremation which was published in a Southern medical journal (*Moody's Magazine of Medicine*, Atlanta, Ga., since discontinued) and quite favorably commented on at the time, but it was not as well written nor as complete as the one we have just heard. I advocated the cremation of the dead from a sanitary standpoint. That is the view I took of it. I think everybody who will think of this thing, and who will look at the matter in the right way can but say that the disposition of the dead by cremation is the best and only way.

DR. FISHE, of Missouri—I can not agree with the principles involved. In dealing with this question we have to go a little beyond our human interest, and consider the welfare of the world at large: what it would do with any human body or any body. In burning our dead we destroy a certain amount of matter which by no means can be restored to the world, and which lessens the amount of ordinary animal or vegetable life which otherwise could be used in the service of ourselves. Perhaps this objection may appear trivial, but if you will consider the amount which, according to these principles, would have to be burned every year, the amount of nitrogenous substance destroyed in this way is enormous, and it can in no way be replaced. Any forest fire, any destruction of organic substances, means a loss to the world, and therefore the principle of the cremation of our dead means that loss to us.

SCARLATINA: SCARLATINOUS SORE THROAT.

A SYNOPSIS OF THREE HUNDRED CASES SHOWING THE PRESENCE OF THE DIPLOCOCCUS SCARLATINAE.*

BY W. J. CLASS, M.D.

CHICAGO.

In presenting this paper it is not my intention to give a detailed description of the germ discovered by me, nor to enter into a discussion of its cultural characteristics, etc., as these are things that do not interest the clinician to the same extent that they do the bacteriologist. What I will attempt to bring forward is the clinical aspect of the finding, its value in diagnosing scarlatina, and also, briefly, my reasons for believing that the diplococcus scarlatinæ is the specific causative factor of the disease under consideration. I have examined cultures taken from the throats of more than three hundred patients with scarlet fever and scarlatinous sore throat. Of 300 of these, a brief record was made; 212 were cases of what is generally called scarlet fever, i. e., a fever accompanied by a more or less distinct eruption consisting of small red spots, separated at first, but soon becoming united by a diffuse scarlet erythema and followed by desquamation; 88 were cases of angina without any, or at least a scarcely perceptible, skin lesion. In all of these 300 patients the primary throat culture showed the presence of the micro-organism previously described by me as the specific scarlet fever germ. In about 80 instances the different germs composing the throat cultures were isolated by means of a modification of the plate method, and the "diplococcus scarlatinæ" obtained in pure culture.

*Read before the Chicago Pediatric Society, Dec. 14, 1899.

The throat normally contains a great variety of micro-organisms, therefore every culture taken from it shows the presence of a contamination. It might therefore be asked: "Is the 'diplococcus scarlatinæ' present in sufficient numbers in cultures taken from scarlet fever throats to lend a distinctive character to them?" I wish to answer this in the affirmative, particularly if the culture-medium advocated by me is used, although coagulated blood serum also furnishes a fair medium. Cultures taken from a scarlet fever throat on the first or second days of the disease will invariably show its presence in great numbers, while those taken later in the disease, though still present, show it in diminished numbers.

There is little difficulty for one at all familiar with bacteriology to recognize it after once having become familiar with its cultural and morphologic characteristics as already described by me. Its chief cultural one is the glutinous character of the growth. This characteristic is usually, though not always, well marked in primary cultures of the scarlet fever germ taken from the throat; subcultures, as a rule, do not show it. The chief morphologic features are their size, primary cultures usually showing it as an organism resembling a huge gonococcus, and the fact that unless the culture is rubbed very hard the germs will show a distinct tendency to group in bunches. A given culture taken from the throat therefore, which, when a loop of the material of which it is composed is taken up, shows a tendency toward being drawn out in threads, and which under the microscope shows large numbers of large diplococci having a tendency toward clumping, may be safely called a scarlet fever culture. In this connection I wish to state that when grown on blood serum the culture usually adheres very firmly to the surface of the medium. The germ also shows quite well in slides made directly from the mucus of the throat, but this method is less accurate than by means of the culture.

I have made mention in this paper of a scarlatinous angina without the eruptive phenomena of scarlet fever, something in regard to which all may not agree. Dr. Jaques, in a paper read before the Chicago Medical Society recently, stated that at present a large number of cases of tonsillitis were caused by the "diplococcus scarlatinæ." My experience in this respect agrees with his, and I think the majority of those present to-night have frequently met with anginas, the throat lesions of which were identical with those seen in typical scarlet fever. I would like to mention a few instances in which the connection between the scarlet fever and the tonsillitis was so evident that, even without finding the same germ, it was plainly shown that the contagion was the same.

CASE 1.—This concerns a family consisting of four members, the father, mother and two daughters aged 18 and 14, respectively. I was called to see the oldest daughter, March 11, 1899, and found her showing all the symptoms of a typical attack of scarlet fever, the

rash fully developed. The throat showed a catarrhal erythema with a granular deposit on each tonsil. Cultures were made from the throat and from a few drops of blood taken, under antiseptic precautions, from the lobe of the ear. These, when subsequently examined, showed the presence of the "diplococcus scarlatinæ." The course of the disease was favorable and, excepting a slight albuminuria, no complications occurred. The patient desquamated profusely, this beginning about the seventh day after the onset of the disease. While the desquamation was still in progress, although I had ceased my visits, I was again called, as the father and younger daughter had been taken ill. The symptoms of both patients were almost identical: both complained of a sore throat, headache and malaise. The throats showed a catarrhal erythema with similar patches to those that had been noticed in the throat of the other patient. Cultures were made from the throats of both father and daughter at the time of this visit, and examination the next morning showed the "diplococcus scarlatinæ" in both in great numbers. On calling the next day the scarlet rash was well-developed in the daughter, while the father showed no sign of any eruption, nor did he develop one. In both, however, there was a pronounced albuminuria.

CASE 2.—In a family consisting of a father and four children, aged 3, 4, 7 and 10 years respectively, I was called Jan. 6, 1899, to see the youngest child. Examination showed that it was suffering from a typical attack of scarlatina. Cultures made from the secretion of the throat and blood showed the "diplococcus scarlatinæ." At the time of my first visit two of the other children in the family, aged 4 and 7 years respectively, were also feeling rather bad; their throats showed a marked catarrhal erythema, and there was some rise in temperature. On this account I took cultures from their throats, and these also showed the diplococcus. Upon visiting the patients the following day, the two children, who had only a sore throat the day previous, also had the scarlet rash. The cases ran the usual course and desquamation began on the sixth day of the disease, the scales again showing the presence of the diplococcus.

On January 16 I was called to see the oldest child, who had been taken sick in a manner similar to that of the other children. Temperature was 104 F., and there was catarrhal erythema of the throat with two small white granular patches on the tonsils. The throat culture showed the same germ as in the other cases. This boy, however, did not develop any rash, and there were no germs present in his blood, although repeated examinations were made.

CASE 3.—This family consisted of father, mother and five children, three boys and two girls, the oldest child being a boy of 10 years, the youngest a girl of 2. The youngest boy was seen about the middle of September, 1899, and was suffering from a typical attack of scarlet fever. The throat secretion and blood showed the presence of the "diplococcus scarlatinæ." As the family had only three small rooms at their disposal, no attempt at isolation could be made. About three days after the first child was taken sick, the second youngest boy developed scarlet fever, and about a week subsequently the oldest boy, all three cases being absolutely typical.

After these three patients had recovered and had almost completed their desquamation, I was called in to see the youngest girl, who had been taken ill suddenly, with vomiting and high fever. On examining the child she presented a sore throat, considerable swelling of the upper cervical glands and a temperature of 104.6 F. A culture was taken from the throat and, the following morning, showed great numbers of the diplococcus. Not much change in the patient's condition was to be seen, except that there were noticed, on close examination, a few scattered papules over the upper part of the chest. These disappeared within a few days. The patient made a slow recovery on account of a subsequent nephritis and bronchitis. At no time was there any reddening of the skin. The oldest girl escaped altogether, although not protected by a previous attack.

I have mentioned only these three instances of those that could be given *ad infinitum* in my experience and that of other physicians for whom I have had the pleasure of examining cultures from scarlet fever cases, because they show, with almost absolute certainty, even without considering the presence of the germ, that the infection was the same in all of the patients. These cases of what I would call scarlatinous sore throat, mentioned in these three instances, occurred simultaneously with the presence of typical scarlet fever in the family. Admitting, therefore, for the present, that their occurrence in the presence of scarlet fever is possible, I would like to ask whether their sporadic occurrence would not also be possible? In this connection I also wish to state that I have found the "diplococcus scarlatinæ" in about 20 per cent. of the cases of acute tonsillitis examined during the last few months. Recently I made a few additional experiments toward establishing the relationship of the germ under consideration and scarlet fever, which it may be of interest to briefly mention.

As stated in some previous articles of mine, the diplococcus, when obtained from the blood of scarlet fever patients, grows very poorly, especially when the culture is taken after the second day of the disease. This was thought to be due to the inhibitory action of the blood present. In order to determine whether the same action would occur when blood from a patient who had passed through an attack of scarlet fever was added to a culture obtained from the scales, a number of experiments were made:

A loop of pure culture of the diplococcus was diluted with fifteen minims of distilled water. One-half of this was poured over a plate of glucose agar, to the other half were added ten drops of blood from a patient who had just recovered from an attack of scarlatina, and this mixture was poured over a similar plate. Both were put in an incubator the temperature of which was kept at about 36 F. At the end of twenty-four hours the plates were examined. The plate made from the culture without the addition of the blood showed innumerable minute colonies of the diplococcus, while on that to which the blood had been added there were only very few colonies. Presumably these had grown, because, from the tendency of the germs to clump, some of them had not been exposed to the action of the blood. This experiment was repeated five times with almost identical results. Each time there was a slight growth of the culture to which the blood had been added, but the growth was so much more profuse in the one made without this addition that the inhibitory action of the scarlet fever blood on the growth of the germ could be plainly demonstrated. Blood from a child 5 months old, where the possibility of a prior infection with the germ could safely be excluded, produced no inhibitory action. My own blood gave a partial reaction, but the inhibitory one was not nearly so well marked as it was when the blood from a recently recovered patient was used. Never having had scarlet fever, this reaction could only be

ascribed to an attack of scarlatinous sore throat passed through some years ago.

The other experiment consisted in inoculating four ordinary gray mice, each of which received five minims of a solution of a virulent culture of the "diplococcus scarlatinæ" in distilled water. Two of the mice had previously received, by subcutaneous injection, five minims each of blood serum taken from a patient recently recovered from scarlet fever. The two animals that had not received the blood inoculation died within eighteen hours, while of the two that had been injected with the blood, one lived about forty and the other seventy-two hours. This last experiment will have to be repeated before arriving at a positive conclusion, still, it seems to suggest that the blood of a patient who has passed through scarlet fever contains an antitoxic substance.

In closing, the writer will briefly state his reasons for believing his "diplococcus scarlatinæ" to be the causative factor of scarlet fever.

1. Because the germ is invariably present in the throat secretions, blood and scales of a patient having scarlatina, and because it is a separate and distinct organism not heretofore described.

2. Because it has been proven to be a pathogenic micro-organism, killing mice, when injected in minute quantities, in a space of time varying from less than one to twenty-four hours according to its virulency.

3. Because it produces, in swine, a disease whose macroscopic lesions closely resemble those seen in scarlet fever as it occurs in the human subject.

4. Because the presence of blood from a patient who has just recovered from an attack of scarlet fever inhibits its growth.

5. Because the subcutaneous injection of a virulent culture into guinea-pigs will, under certain conditions, produce a nephritis.

6. Because the experiment quoted in this paper apparently shows that the blood serum of a person who has passed through scarlet fever protects an animal against the invasion of the germ.

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Therapeutics.

Treatment of Typhoid Fever.

The profession is fairly well agreed on the hygienic treatment of this disease. The dietetic treatment, however, is undergoing some change. Certain eminent physicians, not only in the United States but in Europe, have recently advocated feeding typhoid patients with light or solid food. One physician reports that he has allowed ten patients in succession to have solid food the moment they craved something to eat. Their recovery was uneventful and rapid.

During the course of typhoid, water is needed more than nourishment. Large quantities of water serve to eliminate waste products. The character of the blood indicates a deficiency of water and patients should be encouraged to drink freely of it whether they ask for it or not. It is well to remember that in this disease the sense of thirst is as much obtunded as that of hunger. The late Dr. John Forsyth Meigs was an enthusiastic advocate of water in typhoid fever, and his graphic description of the disease, in a lecture at the Pennsylvania Hospital, in 1879, when he was insisting with great emphasis on supplying water in abundance to typhoid fever patients, is worthy of quotation:

When I stand by the bedside of a severe typhoid fever, and see the patient motionless, insensible, dead to all the usual senses of the living; when I look at his half-closed eyes, his gaping mouth, his dried and fissured tongue; when I brush the unheeded flies from his poor, unconscious face; and when I touch his hot and burning skin—I ask myself into what lower estate the human body can fall. Not only has the patient lost all appetite for food, not only is he dead to all that surrounds him, but this hot and withered body, his dry and pasty mouth, filled with desiccated crusts and sordes, knows no longer even the sense of thirst. This has been the last sense of which he has been deprived. So long as he retained any consciousness at all he would ask for water or for ice. Now he feels not even this great want. It is in this crisis of his life that he is to be saved, if saved at all, only by the constant care of his physician, nurses, and relatives. And woe to the physician who can look on such a sight and not yearn to know all that his art has acquired through centuries of experience and study.

The fact that the majority of typhoid fever patients will recover on the hygienic and dietetic treatment alone does not justify in every case the withholding entirely of medicinal and other treatment.

In another portion of THE JOURNAL, the treatment of typhoid fever is most ably discussed by competent authorities. Here, we will quote formulæ and methods recommended by other physicians for treating complications; making disinfectants, etc.

DIARRHEA.

Dr. Frederick P. Henry, says: "Among the most efficacious means for this purpose are opium suppositories, acetate of lead, gallic acid, nitrate of silver, sulphate of copper, and salicylate of bismuth. Of these drugs I have found the last in 5-grain powders every three hours decidedly the best, and this I attribute to its well-marked antiseptic properties."

Dr. J. W. Wilson says: "The preparations of bismuth, as the subcarbonate, subnitrate, salicylate or subgallate, administered by the mouth in full doses and with a frequency dependent upon the urgency of the diarrhea, either alone or in combination with small doses of opium, Dover's powder or deodorized laudanum, constitute in most cases efficient medication; or, again, opium may be advantageously administered in enemata of starch-water or in suppository; or a combination of the aqueous extract of opium and the extract of cannabis indica in suppository may be employed. Such drugs as naphthalin, thymol, and resorcin, supposed to act directly as intestinal antiseptics have in my experience proved far less useful, while such astringents as alum, plumbic acetate, silver nitrate, tannic acid, catechu, and kino have only a historic interest. If the stools be highly fetid or ammoniacal, half-dram doses of animal charcoal in the form of an impalpable powder may be administered in the broth. Creosote and carbolic acid may also be of service."

Notwithstanding Dr. Wilson's opinion of intestinal antiseptics, many able physicians believe them to be efficacious not only in diarrhea and tympanitis, but in shortening the duration of the disease.

In addition to the Woodbridge treatment, which is too familiar to every physician to quote, the following prescriptions have been recommended by various clinicians:

℞ Creosoti carbonatis ..... ʒxix
Thymoli ..... ʒvi
Mentholi ..... ʒiii
Eucalyptoli ..... ʒviss
Alcohol, commercial, q. s., ad ..... ʒviii
M. ft. solutio. Sig.

This is stock solution of carbonate of creosote compound.

To make an emulsion from the above, in order to better administer it, use

℞ Creosoti carb. comp., solution ..... ʒv
Acaciæ gummi, pulv. ..... ʒiss
Aquæ pura ..... ʒiv
M. Sig. One teaspoonful every three hours in a wineglass of water, to be followed by a drink of water.

—*T. W. Simmons.*

℞ Pulv. carbonis ligni ..... ʒiii
Iodoformi ..... gr. xv
Naphthalini ..... gr. lxxv
Glycerini ..... ʒvi
Carnipepton ..... ʒiss
M. Sig. A teasponful every two hours in one-third glass of water.

—*Bouchard.*

℞ Thymoli ..... ʒii
Saponis medicinalis, q. s.
M. ft. capsulæ No. xxx. Sig. One every four hours.

Or

℞ Thymoli
Guaiacol carbonatis, āā.....3iss
Saponis medicinalis, q. s.
M. ft. capsulæ No. xxx. Sig. One every four hours.
—*Royster.*

℞ Salol 3i
Thymoli .....gr. xxxvi
Bismuthi subnitratis.....3ii
Mucilag. acaciæ.....3ii
Syr. tolutani.....3iv
M. Sig. Tablespoonful three times daily.—*Alfred Moore.*

℞ Methylenæ bichloridi.....3i
Sol. hydrogen peroxidi.....3i
Acidi hydrochlorici dil.....m. xxx
Aquæ destil., q. s., ad.....3vi
M. Sig. One-half ounce every three hours in half a tumbler of water.—*B. W. Richardson.*

℞ Naphthol (alpha).....gr. iv
Phenacetin .....gr. iii
Pulv. rhei.....gr. i
Tinct. cinnamoni.....m. ii
For one tabloid. One or two six times a day.

℞ Naphthol (alpha) .....gr. viii
Bismuthi salicylatis.....gr. ii
Pulv. rhei.....gr. ii
Ext. belladonnæ.....gr. 1/6
Pulv. cinnamomi.....gr. iii
In cachet. One four to six times daily.—*Maximowitsch.*

TYMPANITIS.

Dr. Frederick P. Henry says that meteorism is best treated by the application of cold compresses to the abdomen, and by charcoal and alcoholic stimulants internally. These failing, an enema of cold water may induce contraction of the intestinal parietes at the same time as it mechanically dislodges and expels some of the accumulated gas. As a last resort a rectal tube may be carefully inserted and pushed upward as far as possible.

Dr. J. C. Wilson also advocates the use of alcoholic stimulants in this condition. Turpentin or camphor, he says, together with minute doses of opium, may be added to the treatment, and active preparations of pepsin or peptenzyme, alone or together with hydrochloric acid, should be administered with the food. Compresses wrung out of iced water, or turpentin stupes, should be applied, and cautious, gentle massage of the abdomen is also useful. Small enemata of iced water and cold enemata containing turpentin are sometimes followed by good results.

Dr. Julius Dreschfeld, in "Allbutt's System of Medicine," advises enemata with turpentin or tincture of valerian. Turpentin may be given internally in capsules of 10 minims. If there be much flatulence, carbolic acid, or creosote, or sulphocarbolate of soda (15 grains) may be tried. Hare recommends the following in excessive tympanitis:

℞ Olei terebinthinæ.....3i to ii
Olei olivæ.....3iv
Mist. asafetidæ.....Oi
M. Sig. Use as an injection. Shake well before using.

INTESTINAL HEMORRHAGE.

The last named author advises that hemorrhage from the bowel be treated according to its point of origin, i. e., if in the small intestine, as from ulceration of Peyer's patches or other glands, the medicines must be used by the mouth; if it be from the colon or rectum or from hemorrhoids, medication must be by way of the anus.

"Hemorrhage of the first class," quoting from Hare, "is best combated by the application of a small piece of ice to the belly and by the use of Monsel's salt (ferri subsulphas); 3 grains (0.15) made into a pill should be given every half hour or oftener, the pill being made hard enough to reach the intestine without being dissolved and decomposed in the stomach. The other remedies which are of service are sulphuric acid in the dose of 5 to 10 drops in water in acute or passive bleeding, or turpentin given in capsule, or better still, in emulsion with acacia, in the dose of 10 drops every half hour, particularly when the hemorrhage is not active. Acetate of lead and camphor in the following pill may be of service in some cases.

℞ Plumbi acetatis.....gr. v
Camphoræ .....gr. x
M. ft. pil. No. v. Sig. One pill every hour.

Henry believes that ergot administered both *per os* and hypodermically, with application of ice-cold compresses to the abdomen, is about the best treatment.

Wilson believes little can be done for excessive intestinal hemorrhage outside of absolute bodily quiet, and complete withdrawal of food, even water being administered only in small quantities repeated at short intervals, or small pieces of ice, opium internally, cold to the abdomen, and small enemata of iced water not exceeding four ounces at a time, repeated at short intervals.

Dreschfeld agrees with the authorities mentioned above, regarding the use of drugs in intestinal hemorrhage. He recommends the use of acetate of lead, gallic acid, opium, and turpentin, ice to the abdomen, etc. He advises that milk should be stopped or given with carbonate of soda, or in the form of alum whey, that is, mixed with finely powdered alum and the curds separated from the serum.

Osler says: "Lead and opium pill by the mouth and small doses of morphin hypodermically."

Normal salt solution is injected when there is much loss of blood, and favorable results follow its use in most desperate cases. A fatal result may follow in typhoid fever without blood appearing externally, so we must be on our guard.

The following prescription has been recommended:

℞ Benzonaphthol 3i¼	5	
Bismuthi salicylate.....3iiss	10	
Ext. opii.....gr. iss		10
Syr. rhatany		
Syr. orange flower, āā.....3viiss	30	
Mucilage 3xxx	120	

M. Sig. Soupspoonful every half hour.

CONSTIPATION.

Dreschfeld says that constipation lasting only a few days, and not accompanied by much tympanitis and flatulency, need not be treated medicinally; an admixture of beef tea and milk may be tried. If the constipation be more obstinate, glycerin or cold-water enemata may be given; should these produce little effect, and the constipation have gone on for five days or more, small doses of castor-oil—one or two teaspoonfuls in milk—may be given, and repeated after some hours, if necessary.

PERSISTENT VOMITING.

For this distressing symptom, the same authority says, food should be given in small quantities and often. Milk and lime water or some of the prepared foods or cold meat juice with acid.

℞ Bismuthi subnitratis.....gr. x
Cocainæ hydrochloratis.....gr. ¼
M. ft. chart No. 1. Sig. A powder this size three or four times a day. A sinapism to the epigastrium may also be applied.

Wilson recommends 1/12 gr. of calomel every half hour or full doses of chemically pure cerium oxalate or of dilute hydrochloric acid. Small amounts of iced dry champagne are also useful, together with applications of a wet towel sprinkled with chloroform or sinapisms to the epigastrium.

INSOMNIA.

Chloral and bromids are undoubtedly the best hypnotics, although paraldehyde, trional, chloralamid and sulphonal are preferred by some physicians because they are thought to be less depressing to the heart.

The writer has never noticed any untoward effects from the administration of chloral and frequently combines with it small doses of morphin.

DELIRIUM.

Dreschfeld recommends ice to the head, a sinapism to the back of the head, and morphia with quinin; if of low muttering character, stimulants may be given.

Dr. J. C. Wilson also recommends stimulants, and adds that "alcohol stands first and almost alone, spirit of chloroform and spirit of camphor are of use in emergencies, the latter may be administered hypodermically in 5 per cent. solution in ether, of which 10 minims may be repeated once or twice at intervals of several hours, the toxic effects of large doses of camphor being carefully considered. The hypodermic administration

of ether alone in 10-minim doses is of advantage. Hyoscin hydrobromate in small doses hypodermically, codein, and suppositories containing asafetida are also useful in the treatment of active delirium, while in cases of hysteroidal delirium the bromids in elixir of ammonium valerianate are frequently followed by good effects."

EPISTAXIS.

Referring to this complication, Dr. Wilson advises "local applications of ice to the nose and brow, an ice-bag to the nape of the neck; the slow instillation into the nostril of very hot water, and the introduction of slender cotton tampons moistened and then rolled in antipyrin or wet with fluid extract of hamamelis are measures likely to control the bleeding. Should persistent hemorrhage from the nose occur, the anterior and posterior nares are to be plugged with strips of antiseptic gauze.

Dr. Henry says excellent results are usually produced by the injection into the nares of a solution of alum or tannin, or of pure lemon juice.

BED SORES.

Bed sores can usually be avoided. They are too often an indication of ignorance or negligence on the part of the physician or nurse or both.

Constant cleanliness and watchfulness, a vigilant eye to discharges, attention to the smoothness and dryness of the sheets, and judicious changes of position, are the secrets of success. All parts exposed to pressure and soiling must, at least twice daily, be washed with soap and water, well dried, rubbed with alcohol, and dusted with powder. A useful mixture is one part boric acid to two of starch. If the skin is inclined to be tender it may be painted with collodion or balsam of Peru and powdered. When it is difficult to maintain dryness lanolin or zinc ointment may be rubbed in and powdered.

Dreschfeld recommends the following procedure: "If the skin become rough, reddened, or show slight abrasions, the part may be washed with boracic acid solution and some ointment, such as zinc or boracic acid ointment, or iodoform powder, may be applied to the abraded part. If a slough have formed, antiseptic and stimulating dressings, such as carbolic acid (1 in 40), or compound tincture of benzoin, or balsam of Peru are required. Over the lint, which ought to fit exactly into the ulcer, a piece of gutta-percha tissue is applied, and outside this again some folds of lint, and the whole fixed by a strip of diachylon plaster. When the slough is large it is best to dust it over with iodoform, or iodol or aristol; this is covered by gutta-percha tissue and over this lint dipped in an antiseptic or stimulating lotion is placed."

TO PREVENT THE SPREAD OF THE DISEASE.

The same authority advises that the following measures be adopted: "The dejections—both urine and feces—are to be received into a bed-pan containing a strong disinfectant—1 to 20 carbolic acid—and a sufficiently large quantity of the disinfectant is to be added to the discharge and well mixed with it. The nates must be well cleansed with paper, or with linen moistened with dilute carbolic acid; this refuse is burnt or added to the contents of the bed-pan. The bed-linen, blanket, and body linen of the patient should be changed at once when soiled; they should be placed in a sheet soaked in carbolic acid —1 in 40—and afterward kept for some hours in carbolic acid solution of the same strength; before they are sent to the laundry they should be well boiled. The feeding utensils are to be cleaned in dilute carbolic acid, and afterward with boiling water. The nurse, after attending to the alvine discharges or changing the linen, and always before she takes her meals, should wash her hands in corrosive sublimate solution, 1 to 1000. Every precaution should be taken after the death of a patient as regards the bed clothing, sheets, etc. Mattresses, pillows and clothes should be sent to a disinfecting oven, when this is feasible.

"Instead of carbolic acid as a disinfectant some use strong commercial hydrochloric acid or corrosive sublimate. Chlorid of lime is an excellent disinfectant which quickly destroys typhoid bacilli, and it may be used to disinfect the feces.

"If there be any expectoration, the sputa are to be dealt with in like manner."

The following formulæ are given, of well-known antiseptic and disinfectant solutions:

THIERSCH'S SOLUTION.

℞ Salicylic acid.....1 part.
Boric acid.....6 parts.
Water .....500 parts.
Mix. Dissolve and filter.

CONDY'S FLUID.

℞ Potassii permanganate.....gr. iv
Aquæ .....℥i
Mix.

VOLKMAN'S ANTISEPTIC SOLUTION.

℞ Thymoli .....1 part
Alcoholi .....10 parts
Glycerini .....20 parts
Aquæ .....100 parts
Dissolve the thymol and the alcohol, add the glycerin, then the water.

GREEN VITRIOL SOLUTION.

℞ Copperas .....4 lbs.
Water .....2½ gals.
Used for disinfecting bed-pans, closets, etc.

WHITE VITRIOL SOLUTION.

℞ Sulphate of zinc.....℥ii
Carbolic acid.....℥i
Hot water.....1 gal.
Used principally for washing clothing in contagious diseases.

Medicolegal.

Not Necessarily Slanderous.—An accusation of the use of morphin, the court of civil appeals of Texas holds, in King vs. Sassaman, is not actionable per se.

State Hospital Not Liable For Negligence.—A public corporation, such as a state hospital for the insane, which exercises exclusively governmental functions, the supreme court of appeals of Virginia holds, in the case of Maia' Administrator vs. Directors of Eastern State Hospital, is not liable for the negligence of its agents.

Board of Health Can Charge for Milk Licenses.—A board of health being authorized by law to pass ordinances to protect the public from the sale of unclean and unhealthful milk, the supreme court of New Jersey holds, in State (Blanke, prosecutor) vs. Board of Health of the City of Hoboken, that it is by implication empowered to pass ordinances requiring a license fee sufficient to pay the expense of the license and the necessary expense of inspecting the milk, and that for the labor and expense which must fall on the Board, in the proper discharge of its duty in this connection, a license fee of $2 is a very reasonable charge.

Communications to Railway Surgeons.—A brakeman on a railway train met with an accident in which he sustained injuries that caused his death a few days later. A surgeon in the employ of the railway company, as such, visited him at the instance of the company on the day following the accident. He called to ascertain the extent of the injuries, how they were received, to diagnose the case, to consult with the attending physician, and to approve or disapprove the treatment, and, if necessary, to administer treatment. During the course of his interview with the brakeman, he informed him why he had called, and reduced to writing statements made by him as to how the accident occurred, which statement the brakeman signed. This statement, and the doctor's evidence as to other statements made to him by the brakeman as to how the accident happened, were admitted in evidence over the plaintiff's objection as being incompetent, in an action subsequently brought to recover damages from the railway company for the death of the brakeman. But the supreme court of Iowa holds, Keist vs. Chicago Great Western Railway Company, objection should have been sustained, as the communications were privileged.

Conductor Can Not Employ Surgeon for Trespassers.—In a railway accident were some trespassers—men stealing a ride on a freight train. On arrival at the station the conductor and engineer engaged surgeons to treat the injuries of some of the trespassers. Some hours later, after the services were rendered, the station agent, in response to an inquiry,

received from the superintendent of the railway company the following: "Surgeons should understand we will not bear any expense in connection with injured tramps." The surgeons sued the railway company to recover payment for the professional services rendered. They obtained judgment. But the supreme court of North Carolina reverses the latter. It holds that nothing in the record disclosed the conductor's authority to bind his employer, upon the facts presented, and that the authorities were against the right of the plaintiff to recover in this case, of Adams vs. Southern Railway Company. It says that the question presented was not one of negligence on the part of the railway company in causing the injury, but a question of the conductor's authority to employ the plaintiffs at the railway company's expense, under the circumstances. The conductor, it goes on to state, has no authority to make contracts binding on his employer, outside of the scope of his employment, unless express authority is given or necessarily implied from his employment. There are some emergency instances in which the conductor may engage a physician for the company's servants or passengers, when injured, but as to trespassers on its road no such authority is found to exist.

Right of Board of Health Physicians to Quarantine — Whidden vs. Cheever was brought to recover damages from the physician member of a city board of health for using the plaintiff's dwelling-house and building for smallpox patients, and for confining him to the premises against his will, and exposing him to contagion. The house was situated about three miles from the city, and was occupied by a lessee, the plaintiff reserving certain rooms for the separate use of himself and his sister. Members of the lessee's family were afflicted with the smallpox. The board of health physician thereupon took charge of the sick persons and the buildings, established a quarantine, and posted notices on the outside of the house forbidding any person to leave or enter it. The plaintiff, who was not ill, protested against his confinement to the buildings and the use of his premises, and requested the physician to remove the patients to a pest-house. Nevertheless, he was confined by the physician until the quarantine was raised, when he was released. Upon these facts, could he maintain this action? The supreme court of New Hampshire holds that he could not. It says that it is well settled that such an officer is liable for acts in excess of his authority, but, if he acts within the limits of his authority, and in good faith, he is not liable for errors of judgment. Besides, it holds, statutes enacted for the preservation of the public health are to receive a liberal construction. The statute here especially considered provides that the health officers may remove any person infected with the smallpox to some suitable house provided for that purpose, if it can be done without endangering the life of the person, and may make such regulations respecting such house and for preventing unnecessary communication with such persons or their attendants as they may think proper, or, where they judge that he may remain without endangering others than his own family, they may give license to persons who have been exposed to the danger of taking the disease to be inoculated and to remain in the same house, subject to such regulations as they may impose. The case did not show whether the lives of those sick with the smallpox would have been endangered by their removal to a pest-house. But upon this question the court holds that the decision of the health officers, acting in good faith, would have been final; and, as there was no imputation of bad faith, that it may be assumed that, in the opinion of the health officers, the lives of the patients would have been endangered by their removal. The doctor, it adds, did what he was authorized to do by the statute. He allowed the sick persons to remain in the house, and that was the extent of the possession exercised by him. In forbidding inmates of the house not afflicted with the smallpox to go abroad, and persons from abroad to enter, he conformed to the usual practice. Moreover, the court holds that there was no taking of property for public use without compensation. It says that it was merely the exercise of a reasonable health regulation under the police power of the state, within the limitations of the statute. Such regulations as are reasonably calculated to preserve the public health are valid, though they may abridge individual liberty and rights of property. And for these several reasons the court holds that notwithstanding the plaintiff suffered on account of his exclusion from association with the community during the prevalence of the disease to which he was exposed, the defendant, physician of the board of health, was not liable to him for damages.

Expert and X-Ray Evidence.—An injury was diagnosed by a medical expert as a dislocation of the cervical vertebræ, complicated with a fracture. He then testified, without qualification or limitation, that the accepted treatment of a dislocation of cervical vertebræ, as laid down by the medical authorities, was a reduction of the dislocation. Later he was asked, on cross-examination, whether a certain work—admitted by him to be a standard authority—did not lay it down that, where the dislocation was complicated with a fracture, no physician would be justified in attempting to reduce the dislocation. This was an action for malpractice, and the supreme court of Minnesota holds it was proper cross-examination, and that it was error to exclude the question. The court goes on to say that all hypothetical questions put to an expert witness must be based on facts admitted or established, or which, if controverted, might be legitimately found by the jury from the evidence. They should also embody all the facts relating to the subject on which the opinion of the witness is asked. Accordingly it holds a hypothetical question to have been properly allowed, when it did not include all the facts bearing on the subject on which the opinion of the witness was asked, and also because it was based in part on a fact not admitted or established, and which there was no evidence tending to prove. Then a much more interesting question was raised: during the progress of the trial, the defendant, case of Wittenberg vs. Onsgard, introduced the testimony of a medical expert, tending to prove that the nature of the injury to the plaintiff's neck could be ascertained by the application of the Roentgen (commonly called "X") rays, that the witness had some experience in the use of these rays in surgery, and that no evil effects could result from their use, except that, if there was a very long exposure of the parts to the rays, there might be a burning of the skin, but that there would be no necessity for any such prolonged exposure for the purpose of taking a photograph of the plaintiff's neck. On this showing, the defendant's counsel requested the court to give him "the privilege of taking an X-ray photograph of the plaintiff's neck." Although peculiarly worded this was construed as asking the court to require the plaintiff to submit his neck to the X-rays for the purpose of taking a photograph of it. The court's refusal to so order was assigned for error. This leads the supreme court to say that the discovery of the X-rays is comparatively recent. Its utility and the reliability of its results, however, are already so well established as scientific facts that courts ought to take judicial notice of them. And, if the fact that the exposure of the person to these rays is harmless becomes as well established in science as is the accuracy of photographs taken by them, there is as much reason why, in a proper case, under proper safeguards, and at the reasonable request of the defendant, the plaintiff should be required, in a case like this, to submit his neck to those rays for the purpose of photographing it, as there is for requiring a party to submit his person to a physical examination. Whether science is as yet sufficiently advanced on the subject to so hold may admit of doubt, and a person can not be required to submit his person to any process which is liable to injure him. It is impracticable to stop the trial in order to ascertain by evidence whether the exposure of a part of the human body to these rays is liable to result in injury. Moreover, if any such practice should obtain, there would be no uniform rule on the subject, as each case would depend on the evidence introduced, and the conclusion which the particular judge would draw from it. Hence a party ought not to be required to submit his person to the X-rays until it is so well established as a fact in science that the process is harmless, that the court will take judicial notice of it. It may admit of doubt whether that time has yet arrived. But, without passing on this last question, the supreme court holds that the defendant's request was properly refused for two reasons: 1, that the request was not seasonably made; and 2, that it did not sufficiently appear that the person by whom the defendant desired the photograph to be taken had the necessary skill or experience to properly and safely apply the rays without injury to the plaintiff.

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Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, February 8.

1.—*Massachusetts State Hospital for Consumptives at Rutland: Its Purpose and the Work Accomplished the First Year. Vincent Y. Bowditch.
2.—*Bradycardia, with Report of Case. Richard F. Chase.
3.—*Brief Note on Some of Those Grave Abdominal Lesions which Often Defy Diagnosis. Thomas H. Manley.
4.— Case of Multiple Cerebral Hemorrhages from Chronic Lead Poisoning, with Necropsy. J. W. Courtney.

Medical News (N. Y.), February 10.

5.—*Policy of the State Relative to the Spread of Tuberculosis. Enoch V. Stoddard.
6.—*The Justo-Major Pelvis as a Factor in the Causation of Perineal Injuries. Joseph Brown Cooke.
7.—*Report of Bacteriologic Investigations on Yellow Fever. Aristides Agramonte.
8.— Atresia Vaginæ; Solid Uterus; Hematoma of Left Ovary. H. J. Garrigues.

New York Medical Journal, February 10.

9.—*Benefits of Medical School Inspection. Henry Graham MacAdam.
10.—*Clinical Studies of Cardiac Diseases in Infancy and Childhood. John Zahorsky.
11.—*Malarial Hematuria. (*Concluded.*) Bat Smith.
12.—*Recovered Consumptives who Remain Well. Paul Paquin.
13.— Fracture of Patella: Complete Union by Open Operation Seven Months after Injury. Joseph B. Bissell.
14.—*Suggestion for Tablet Triturate Manufacturers. Charles J. Proben.
15.— Case of Mixed Typhoid and Malarial Fevers. James L. Bevans.
16.—*Athletics in Public Schools. J. Gardner Smith.

Medical Record (N. Y.), February 10.

17.—*Remarks on Subphrenic Abscess; with Report of Three Cases. A. A. Berg.
18.—*Results of So-Called Conservative Treatment of Appendicitis. Samuel Lloyd.
19.—*How the Milk Supply of New York May be Improved. Henry Dwight Chapin.
20.—*New "T" Bandage. W. O. Green.

Philadelphia Medical Journal, February 10.

21.—*Celluloid Yarn: A New Method for Sutures and Ligatures. Sanitaestrath J. Pagenstecher.
22.— Position Symptoms in Joint Diseases. Harry M. Sherman.
23.—*Some Casual Remarks on Prostitution and Venereal Diseases in Their Relation to the Public. Isadore Dyer.
24.—Albuminuria, Its Significance and Detection. Thomas P. Prout.
25.— Locomotor Ataxia. Recovery in a Case Repeatedly so Diagnosed. David S. Booth.
26.— Syphilitic Fever. A. C. Morgan.

Cincinnati Lancet-Clinic, February 10.

27.—*Diagnosis of Rectal Diseases. Geo. J. Monroe.
28.— Surgery in the Country: How We Do It. P. C. Layne.

Medical Review (St. Louis, Mo.), February 10.

29.—*Observations in Treatment of Cystitis and Prostatitis. D. A. Richardson.
30.— Retrodisplacements of Uterus, Indications for and Methods of Treatment. Milo B. Ward.

Virginia Medical Semi-Monthly (Richmond), January 26.

31.— Meningitis and Appendicitis. R. I. Hicks.
32.—*Perfect Antidote for the Poison of Snake and Spider Bites. S. T. A. Kent.
33.— Septic Thrombosis of the Sigmoid Sinus. Charles W. Richardson.
34.— Report of Two Cases of Laceration of Cervix and Perineum. Johannes C. Bodow.
35.— How Does Albumin Get in the Urine? M. D. Hoge, Jr.

American Journal of the Medical Sciences, February.

36.—*Some Cases of Dilatation of the Stomach. John H. Musser and J. Dutton Steele.
37.—*Surgical Treatment of Acute Puerperal Sepsis, with Special Reference to Hysterectomy. Hiram N. Vineberg.
38.—*Case of "Family Periodic Paralysis." James J. Putnam.
39.—*Increasing Prevalence of Cancer as Shown in the Mortality Statistics of American Cities. G. Betton Massey.
40.—*Narcolepsy: A Conribution to the Pathology of Sleep. D. J. McCarthy.
41.— Critical Summary of the Literature on Influence of Heredity on Deafness. W. Scheppegrell.

Annals of Gynecology and Pediatry, January.

42.—*Experience in Operations for Typhoid Perforations. Hugh M. Taylor.
43.—*Beef-Gall Enemata in Treatment of Post-Operative Obstinate Constipation and Intestinal Obstruction. F. C. Ameiss.
44.— Two Cases of Vesicovaginal Fistula. John O. Polak.
45.— Multiple Pregnancy, with Report of Cases. A. W. Shea.
46.—*Cervical Flexions: Their Importance and Means of Curing Them. T. J. Bell.
47.— Tubal Pregnancy, with Report of Cases. J. M. Black.
48.— Some Remarks on Heredity. I. A. MacSwain.
49.— Gastro-Enteritis. Robert W. Hastings.

Archives of Otology (N. Y.), October-December, 1899.

50.— Case of Influenza Followed by Mastoid Abscess, Sinus Thrombosis, Meningitis and Death: Autopsy. Frank Allport.
51.— Multiple Tubercular Tumors of Skull and Both Tympanic Membranes. H. Freysing.
52.—*Otitis Media in Early Childhood. A. Barth.
53.— Case of Epidemic Cerebrospinal Meningitis with Bilateral Otitis; Trepanning of Both Mastoids, Exposure of Transverse Sinus; Recovery. Stanislaus v. Stein.
54.—*Thyroid Treatment of Chronic Deafness. Alfred Bruck.
55.—*Tinnitus Aurium. Rudolph Panse.

Chicago Medical Recorder, January.

56.—*Case of Pulmonary Tuberculosis Successfully Treated by Drainage and Iodoform, with Apparent Recovery. Alexander Hugh Ferguson.
57.—*Relation of Mental Disease and Residence in an Asylum or Sanitarium to Life Expectancy. Harold N. Moyer.
58.—*Relation of Chronic Ear Diseases to Life Insurance. J. Homer Coulter.
59.—*Examination of Women for Life Insurance. Denslow Lewis.
60.— Fracture of Upper Third of Left Femur in an Infant. Robert T. Gilmore.
61.— Report of Case of Cerebral Tumor; Operation; Death; Autopsy. D. A. K. Steele.
62.—*Some Additional Cases of Brain Tumor. Hugh T. Patrick.
63.— Diagnosis and Operation of a Case of Cerebral Tumor. O. M. Steffenson.
64.— Surgical Cases. Daniel H. Williams.
65.— Cystoscopic Demonstrations. F. Kreissl.
66.— Vesicorectal Anastomosis. Jacob Frank.

Medical Review of Reviews (N. Y.), January 25.

67.— Four Cases of Epithelioma of Eyelids. David Webster.

Western Medical Review (Lincoln, Neb.), January 15.

68.—*Surgical Diseases of Biliary Passages. Byron B. Davis.
69.—*What Should be the Position of the Surgeon Relative to the Treatment of Appendicitis. J. E. Summers, Jr.
70.— Premature Casting off of Products of Conception, with Their Management. W. L. Downing.
71.—*Surgery in Relation to Persons of Advanced Age. Milo B. Ward.
72.— Management of Puerperal Eclampsia. J. Lue Sutherland.
73.—*Pathology of Pneumonia. W. R. Lavender.
74.— Uric Acid a Factor in Functional Neurosis. J. M Aikin.
75.— Abortion. (*Continued.*) A. D. Wilkinson.

Pennsylvania Medical Journal (Pittsburg), January.

76.— Typhoid Fever and Our Water Supply. Edmund W. Holmes.
77.— Syphilis of Nose and Throat. W. S. Brenholtz.
78.— Later Development of Roentgen Ray Method of Diagnosis. Chas. L. Leonard.
79.— Some Reasons Why Antitoxin is Condemned and How the Objections to Its Use May Be Overcome. W. S. Plotner.
80.— Report of Two Cases of Metastatic Choroiditis Occurring in Children, Following Measles. Edward Stieren.
81.— The Reflexes. Theodore Diller.

Cleveland Medical Gazette, January.

82.—*Observations on Abdominal Sections Based on Four Hundred Operations. George W. Crile.
83.—*Croupous Pneumonia in Children. J. Park West.
84.—*Early Intubation in Laryngeal Diphtheria. Wm. E. Lower.

Journal of Boston Society of Medical Sciences, January.

85.— Instruction in Bacteriology in Medical Schools of America and Europe. H. C. Ernst.

Annals of Otology, Rhinology and Laryngology (St. Louis, Mo.), November, 1899.

86.—*Diabetic Ulcerations of the Throat. W. Freudenthal.
87.—*Surgical and Pathologic Features of Tuberculosis of the Esophagus with Reports of Two Autopsies. William Bartlett.
88.—*Effect of Atmospheric Changes on Hearing in Chronic Catarrhal Otitis Media. Seymour Oppenheimer.
89.—*Dilatation of Heart Complicating Obstructive Lesions of Upper Air-Passages. John A. Thompson.
90.— Suppurative Ethmoiditis and Its Treatment. Frank S. Milbury.
91.— Plasmine Solution as a Rational Cleansing Agent. A. D. McConachie.
92.— Personal Observations in Therapy: Valsalva's Method Reversed: Muco-Cutaneous Lesions: Hemostatic for Mucous Surface Operations: Splint for Septal Operations. A. T. Mitchell.

Bulletin of Cleveland General Hospital, October, 1899.

93.— Report of Several Cases of Typhoid Fever with Interesting Complications. I. Friedman.
94.— Treatment of Stone in the Bladder. C. B. Parker.
95.— Case of Puerperal Mania with Albuminuria. C. F. Dutton.
96.— Osteomyelitis of Fibula with Spontaneous Casting Off of Entire Bone, Empyema, Pyemic Abscesses and Recovery with a Useful Limb. J. C. Steurer.
97.— Report of Case of Persistent Priapism. W. J. Scott.
98.— Case of Appendicitis. Geo. W. Crile.
99.— Guaiacol in Orchitis and Epididymitis. William Nuss.
100.— Kryofin in Neuralgia. Charles J. Aldrich.

Richmond Journal of Practice, January.

101.—*Experience in Operations for Typhoid Perforation. H. M. Taylor.
102.—*Tight Lacing as an Etiologic Factor of Disease. Thomas J. Hughes.
103.— Typhoid Fever Complicated by Cancrum Oris. George E. Barksdale.

St. Louis Courier of Medicine, January.

104.— Sanatoria for Consumptives. Beverly Robinson.
105.— Relative Value of Antisepsis and Improvement in Technic, as Regards Actual Results in Operative Gynecology. L. Gustave Richelot.

106.— Functional Derangements of Ocular Muscles. Edward R. Wright.
107.— Typhoid Fever Complicated with Chorea and Diabetes Insipidus. Carl Orth.
108.— Torpor of the Retina Due to Exposure in the Klondike. J. Ellis Jennings.
109.— Report of Results of Eighteen Tests Made for Rendering the Hands Aseptic Before Operation. N. B. Carson.
110.— Removal of One Hundred and Seven Polypi at One Sitting. H. W. Loeb.

Toledo Medical and Surgical Reporter, February.

111.—*Question of Surgical Intervention in the Aged. John Chadwick Oliver.
112.— Pulmonary Tuberculosis Treated with Hypodermic Injections of Bromin-Iodin Compound, with Clinical Reports. Paul Plummer.
113.— Annual Address. Walter H. Snyder.

Indiana Medical Journal (Indianapolis), February.

114.— Spontaneous Escape of Cerebrospinal Fluid from Nose. Ludwig Hektoen.
115.— Relation of Mental States to Making of Wills. P. W. Payne.

Denver Medical Times, January.

116.—*Mastoid Disease with Report of Cases. Charles K. Cole.
117.—*Gall-Stones with Report of Cases. I. B. Perkins.
118.—*Chalicosis Pulmonum, or Chronic Interstitial Pneumonia Induced by Stone Dust. William Wirthrop Betts.

Occidental Medical Times (San Francisco), February 1.

119.— Large Solitary Tubercle of Heart. A. W. Holsholt.
120.— New Materia Medica and Modern Doctors. H. D'a. Powers.
121.— Leucopathia Unguium of Nervous Origin: Coincidence of Dermatosis: Nondescript Disease of Nails. Wallace A. Briggs.
122.— Report of Case of Subglottic Tumor. George H. Powers.
123.— Hydrocephalus: Cranial Paracentesis: Lumbar Puncture. W. N. Sullivan.
124.— Report of Case of General Tuberculosis. Dextrocardia Meningitis, Lumbar Puncture. S. J. Hunkin.

Atlanta Journal-Record of Medicine, January.

125.— Relative Digestibility of Breads Made with Different Leavening Agents. Edgar Everhart.
126.— Some Cases of Conservative Gynecology. G. Betton Massey.
127.— Numerous Obstructions of the Larynx. W. Jay Bell.
128.— Whooping-Cough in Infants and Treatment to Prevent Complications. C. E. Murphey.

St. Louis Medical and Surgical Journal, February.

129.—*Successful Removal of Tattoo Marks and of Powder Stains. A. H. Ohmann-Dumesnil.
130.— Employment of Iron Preparations in Treatment of Syphilitic Anemia. A. H. Ohmann-Dumesnil.

American Therapist (N. Y.), January.

131.— Portraiture of Medical Practice. Albert Abrams.
132.— Study of the Value of Alcohol. J. M. French.
133.— Argonin: Its Use in Acute Urethritis. T. A. Hopkins.

Texas Medical News (Austin), January.

134.—*Something About Living Corpses (Cadavers). A. Schirman.
135.— Strangulated, Incomplete Infantile Inguinal Hernia, with Nondescended Testicle in the Inguinal Canal: Operation: Recovery. Henry A. Barr.
136.—*Malignant Dysentery. E. A. Malsch.
137.—*Hemorrhagic Malarial Fever and Its Treatment. Walter Shropshire.

New York Lancet, January.

138.— Ten Years' Experience with Alexander's Operation. A. Lapthorn Smith.
139.— Surgical Intervention for Severe Intestinal Hemorrhage Complicating Typhoid Fever. Edwin Ricketts.
140.— Indefiniteness of Our Nomenclature. H. A. Fairbairn.
141.—*Headaches and Their Treatment. T. Lauder Brunton.
142.— Series of Cases of Arthrotomy for the Relief of Pain, and for Removal of Synovial Fringes, Loose Bodies and Fibro-Cartilages. C. B. Lockwood.
143.— Treatment of Uterine Cancer. Thomas More Madden.
144.— Case of Ovariotomy. E. H. Tipper and A. E. Philipps.

American Journal of Surgery and Gynecology (St. Louis, Mo.), January.

145.— Removal of Superior Maxilla, Turbinates, Palate, Vomer and Parts of the Ethmoid and Malar for Osteosarcoma: Deformity Relieved by Obturator: Eight Years Without Recurrence. Emory Lanphear.
146.—*Application of Roentgen Rays to Surgery. C. Mansell Moullin.
147.— Short Clinical Contribution to Relation of Surgery to Nervous and Mental Diseases. M. P. Sexton.
148.—*Case of Sarcoma of Conjunctiva, with Remarks on Metastatic Sarcoma and Carcinoma. James Moores Ball.

Southern Practitioner (Nashville, Tenn.), February.

149.— Is There Any Causation or Etiologic Relation Between the Extensive Use of Alcoholic Drinks and Continued Increase of Epilepsy, Imbecility, Insanity, and Criminality in All the Countries of Europe and America? N. S. Davis.
150.— Two Troublesome Cases Cured, One of Chronic Rheumatism and Another of Constipation. D. C. Rees.
151.— Hypo-Quinidol. Q. Cincinnatus Smith.

Southern Medical Journal (La Grange, N. C.), January.

152.—*Experience in Operations for Typhoid Fever. Hugh M. Taylor.
153.— Acute Bronchopneumonia in Infants. John W. Kyger.
154.—*Lithemia. J. W. P. Smithwick.

New England Medical Monthly (Danbury, Conn.), February.

155.— Present Day Treatment of Diphtheria. Robert E. Coughlin.
156.— Modern Cesarian Section. George G. Hopkins.
157.— Recent Progress in Renal Surgery. W. Wendel.
158.— What Suture Material Do You Use? Rufus A. Kingman.
159.—*Lithemia. J. W. P. Smithwick.
160.— Perfect Substitute for Quinia. F. E. Burgevin.

Brooklyn Medical Journal, February.

161.— Typhoid Fever. J. Harrigan.
162.— Injury of the Eye, Necessitating Enucleation Twenty Years Later, with Illustration. P. C. Jameson.

AMERICAN.

1.—This paper was editorially commented on in THE JOURNAL of February 17, p. 433.

2. **Bradycardia.**—Chase analyzes thirty-five cases of idiopathic bradycardia, and discusses the condition generally. The points to which he calls especial attention are: 1. A pulse-rate under 60, which is synchronous with the heart's systole, constitutes a bradycardia, according to Grob. 2. The condition, all classes considered, is of common occurrence. 3. It is much more common in males than in females. 4. There are three types of bradycardia, as classified according to their clinical aspects. 5. The class here termed idiopathic bradycardia, on account of its usual fatal termination, must not in any case be passed by as a mere curiosity.

3. **Obscure Abdominal Lesions.**—The class of cases discussed by Manley comprises those abdominal lesions where the actual conditions are not readily or easily diagnosed, and he points to the necessity of caution or thorough deliberation before attempting the operation of laparotomy. If in doubt, don't interfere, he says. Three cases are reported, all fatal, occurring rapidly, in succession. They have chilled his enthusiasm for early operation in these cases, and he says that unless we are sure that a large rent or a hollow organ is involved, immediate section for violent contusion should be discouraged, while in any case, before reaction is established, it is a desperate resource of very questionable expediency.

5. **State Policy as Regards Tuberculosis.**—Stoddard does not believe in the state caring for tuberculosis cases, excepting in a few sanatoriums, which will serve an educational purpose. Incipient cases only should be cared for.

6. **The Justo-Major Pelvis and Perineal Injuries.**—Cooke argues that in the abnormally increased caliber of the justo-major pelvis, the head does not "mold" and, when it is delivered, it distends the surface parts to an excessive degree, further increasing the liability to laceration.

7. **Yellow Fever.**—Agramonte criticises Wasden and Gedding's methods and findings, noticed in THE JOURNAL of August 26, 1899, p. 559. He claims that their technique was faulty and the chances of contamination almost infinite. He also claims that with more careful methods his results have been materially different, and offers the following conclusions: 1. The specific pathogenic micro-organism of yellow fever is as yet an unknown entity in spite of the work reported by various observers; apparently, new methods of cultivation must be initiated or new culture-media be devised in future research. 2. The bacillus icteroides of Sanarelli is no more concerned in the production of this disease than the common colon bacilli which are constantly found in the blood and viscera of individuals suffering or dead from yellow fever. 3. When approved bacteriologic methods are employed, the bacillus of Sanarelli does not, as a rule, appear in cultures from the blood of yellow fever patients. 4. The bacillus icteroides may be and has been found present in the tissues of cadavers dead from other diseases, neither allied nor similar to yellow fever. 5. The bacillus of Sanarelli, when subjected to agglutination tests, is not affected by the serum of yellow fever patients or convalescents. 6. The serum of convalescent yellow fever cases affords absolutely no protection against infection by the bacillus of Sanarelli. 7. None of the organisms thus far isolated from yellow fever cases can be considered as the pathogenic agent of the disease. 8. Experimental evidence has demonstrated that the serum of individuals convalescing from yellow fever, or who lately suffered an attack of this disease, will very materially and favorably affect those actually under the influence of the infection if injected under the skin, on or before the fourth day after the invasion; but that it requires further study to determine the protective power of different sera and the dosage. 9. From the experimental evidence above referred to, we are led to believe that the subcutaneous injection of convalescent's serum will convey immunity to individuals

whom we to-day consider as susceptible to the disease. The larger part of this paper is devoted to the author's methods of obtaining material, and the results of autopsies. In three cases which were not yellow fever, he found the bacillus icteroides. The article is to be continued.

9. **Medical School Inspection.**—The history of medical school inspection is first noticed by Macadam, who then describes the methods adopted in New York. The physician simply examines the children and sends them home for treatment, never prescribing or visiting. The diseases in which he decides are chicken-pox, parasitic diseases, contagious eye diseases, mumps, whooping-cough, and certain skin disorders. In cases of measles, diphtheria, scarlet fever, or croup, the children are admitted to school again on presentation of the usual board of health certificate. The statistics for 1898 show 7606 cases excluded, each one of which was a seed of disease capable of multiplying itself indefinitely. Under the system now in practice, closing the schools on account of epidemics has become an impossibility.

10. **Cardiac Diseases in Infancy.**—Zahorsky reports a number of cases showing the frequency of cardiac diseases in young children, frequently overlooked by practitioners. His paper is illustrated by diagrams showing the condition. He urges that cardiac disorders are exceedingly common in infancy and childhood, and if sought for will be readily discovered. He has made it a rule, at the St. John's Hospital Dispensary, to examine the heart as a routine procedure; to map out its size, noting the pulsation and auscultating sounds in every case, and it is astonishing how frequently disorders of this organ are discovered. One great difficulty is to determine the enlargement of the heart. On account of the varying obliquity, the breadth of cardiac relative dulness is very unreliable.

11. **Malarial Hematuria.**—Smith's article takes up the diagnosis of malarial hematuria, especially from yellow fever, which has some positive resemblance and may be at times difficult to distinguish. One characteristic symptom of yellow fever absent in hematuria is capillary stagnation producing dermography and also a swollen, bloated appearance and a remarkable expression of the face which is difficult to describe. Vomiting in hematuria is frequently an early symptom; in yellow fever it usually appears shortly before death. In malarial hematuria, the vomited substance rarely contains blood, but large quantities of blackish-green grumous and disintegrated bile. Its reaction is acid, contrasting with that of yellow fever, which is alkaline. As regards treatment, he finds the best results from calomel. Diuretics are the remedies chiefly contraindicated, and quinin treatment he condemns absolutely.

12. **Cures of Consumption.**—The serum treatment of tuberculosis is advocated by Paquin, who here publishes a number of cases of patients who have been treated since 1894, and who have recovered and remained well. With the improved methods now possible, he hopes for still better results.

14. **Tablet Triturates.**—The suggestion offered is to make a distinction in color, labels and otherwise of the actively poisonous alkaloids in tablet triturates, from other less dangerous drugs.

16. **Athletics in Public Schools.**—Gardner Smith's article is a plea for greater attention to physical training in public schools, especially gymnastic exercises.

17. **Subphrenic Abscess.**—Berg describes the symptoms, diagnosis and treatment of subphrenic abscess, with its complications, and reports three cases. The diagnostic points, as given by Leyden, are: 1. The previous history of the patient, which points to a primary trouble somewhere in the abdomen, and not in the chest. 2. The absence of cough and expectoration, or of any pulmonary lesion which could give rise to a pyopneumothorax. 3. The presence of normal vesicular murmur, with normal fremitus at the apex, with a sharp line of differentiation from the amphoric breathing below; furthermore with deep inspiration the line of normal breathing descends to where the amphoric breathing has been. 4. The very slight displacement of the apex-beat. 5. The rather inconsiderable bulging outward of the intercostal spaces, and the absence of immobility of the chest wall. Neuser has added the observation that the basal line of thorax dulness is crescentic, with the convexity downward, instead of horizontal, as in encapsulated pyopneumothorax. In Berg's cases the diagnosis should have been easy, but in one the high site at which the pus was aspirated led him to expect to find a sacculated empyema. If he had kept in mind the absence of previous pulmonary lesions and the presence of abdominal trouble, he would have made the diagnosis correctly. The important point as to treatment is to avoid opening the pleural cavity. He can not lay too much stress, he thinks, on this point.

18. **Treatment of Appendicitis.**—Twenty-five cases are here reported, of conservative treatment of appendicitis; 6 terminated fatally, making a mortality of 24 per cent., which is not a favorable showing. In the author's 154 cases operated on he has had but 4 deaths. He concludes that one attack of appendicitis predisposes to recurrence, and that operation offers the best, safest and shortest method of treating the condition.

19. **Milk Supply.**—Chapin advocates the co-operation of physicians with milk producers, as an improvement over the present condition. If the milk is approved by the physician, the public can feel safe, and he believes that the method will be a practicable one.

20. **New "T" Bandage.**—This consists in simply a bandage passed around the body with the long end passed through a slit in the other end of the bandage, and brought forward between the limbs and fastened in front with a single bow-knot.

21. **Celluloid Yarn.**—Pagenstecher strongly recommends celluloid yarn for sutures. It is strong, smooth and non-absorbent, can not unravel nor expand, and its knots are absolutely secure and do not require excessive constriction. He employs it for internal as well as external sutures and ligatures, and in every case it has given satisfaction. Sterilization before use can be done by boiling or steaming.

23. **Prostitution.**—Dyer believes prostitution can be best checked: 1. By the education of children before and as they become sexually mature; by teaching them physiologic laws in their application to animals and to mankind, especially sexual laws. Prurience flies before the knowledge of the truth. 2. By creating in the minds of civilized men and women a spirit of tolerance, instead of abhorrence, of fallen women; by offering opportunities of reform for them, not by public institutions advertising their former lives, but by affording opportunities of education in lines of interest, opening unadvertised homes where they may be casual or permanent visitors, and where music, literary, and other occupations may be had; for the life of these women is full of every kind except wholesome occupation. 3. Have the profession know that a sexual pervert is not a criminal but a victim of civilization forced to the wall by the necessity for the morbid in the development of the pure. Recognize this class of individuals, from the mere prostitute, male or female, up to the pederast, Sadist, or fetich-lover, as victims of disease needing care and treatment just as much as, or even more than those otherwise afflicted. Let education be unrestricted, and where ignorance dictates a judiciary judgment on the work and the author of the educational volume, let this be resented instead of upheld. Zola, Lombroso, Kraft-Ebing, and Havelock Ellis have committed no crime because they have pictured life and tried to make people know their kind. The very impugning of their motives has, through a false justice, created the very morbid desire which each of these men has sought to overcome by making a special sort of knowledge common property. He believes in the hospitalizing of gonorrhea and syphilis, and thinks that a law making the spreading of venereal diseases an offense punishable by fine or imprisonment or both would be advisable. He admits this would be hard to enforce, but an occasional example only would have a valuable educational effect.

27. **Diagnosis of Rectal Diseases.**—Monroe briefly reviews the general points in rectal diseases. He describes his methods and thinks the rectal speculum is almost unnecessary for this purpose. For anesthesia he prefers chloroform.

29. **Cystitis and Prostatis.**—Richardson, having tried the procedure recommended by Edgar, of injecting iodoform into the urinary bladder in cystitis, finds that in males it was sometimes followed by abscesses of the prostate and also an uncomfortable eczematous and pruritic condition. This led him to look for some drug as a substitute, and he found this in europhen, which did equally good service without the uncom-

fortable complications. It never causes irritation, nor is its application to the mucous membrane of the bladder followed by untoward results. It can be retained indefinitely with comfort. The vehicles used by him are pure olive-oil or water. The former is preferable in many cases, but other oils are not desirable. From three to six treatments of ten grains or less each usually cure a case of subacute cystitis, and he claims he has cured many cases of chronic gonorrhea of long standing in this way. He gives his method of administering the injection, generally using an ounce of olive-oil on alternate days. The patient is placed flat on his back with the knees drawn up and recti muscles relaxed, and kept there at least twenty minutes at each treatment, when the upright position may be resumed. He is instructed to retain the injection as long as comfortable. Several cases are reported illustrating this method.

32.—This paper has been previously printed as an original: see THE JOURNAL of February 3, ¶ 75, p. 287.

36. **Dilatation of the Stomach.**—The authors report seven cases of stomach dilatation, occurring mostly in medical students, who, from their habits of life, seem to be given to hasty eating, and to too great a proportion of fried and fatty foods, etc., common factors in the causation of the condition. The conclusions are: 1. The symptoms on which most reliance can be placed in determining the presence of gastric motor insufficiency are—*a*, the presence of food and fluid in the stomach lasting over night; *b*, the ready entrance of fluid through the tube and difficulty in the return flow; *c*, the absence of visible gastric peristalsis; *d*, evidences of fermentation and intoxication by the products thereof; *e*, thirst; *f*, scanty and concentrated urine. 2. In determining the position and size of the stomach, by far the most certain method has been inflation by air through the stomach-tube; auscultatory percussion, Dehio's method, and determining the capacity of the stomach by the amount of water required to produce a sense of fulness, while signs of value, may lead to error. 3. It may be inferred from the somewhat small number of cases just reported that the condition is not uncommon in students. An analysis of the etiologic factors is as follows: myasthenia caused by chronic gastritis from the abuse of alcohol and tobacco, 4 cases; myasthenia from deficient innervation, 2; myasthenia, probably of congenital origin, and myasthenia occurring in the course of acute disease, each 1 case.

37. **Surgical Treatment of Acute Puerperal Sepsis.**—Vineberg's paper illustrates his views with reports of several cases of puerperal sepsis, and with special reference to hysterectomy. The points he endeavors to make are: 1. Puerperal sepsis is wound fever, and wound infection in the female genital canal, as elsewhere, calls for surgical measures, such as free drainage, irrigation, and the removal with a sharp instrument of any debris or exudate that may form on the surface of the wound. These means failing to accomplish the desired result, ablation of the diseased organ or organs as a *dernier ressort* is indicated. 2. In a given case of puerperal sepsis a thorough search is to be made of the whole of the genital canal in order to determine the site of the original infection. 3. If this is situated in the uterus, currettage, drainage, and irrigations are to be employed. In 95 per cent. of the cases of puerperal sepsis nowadays met with this plan of procedure will be all that is necessary to bring about a cure. 4. In the remaining 5 per cent., roughly speaking, these measures will not be efficacious to arrest the progress of the infection, as will be evidenced by the pulse, temperature, general course of the disease, and sometimes by local signs. An exploratory laparotomy is then indicated, the further course to be guided by the pathologic lesions found. In most of these cases total hysterectomy will be required. 5. When large collections of pus form and are so situated that they can be readily reached either with a vaginal incision or with one above either of Poupart's ligaments, no time should be lost in resorting to surgical relief. When, however, they are not so favorably situated, judicious delay is advisable, with the hope that ultimately the pus may be evacuated without the risk of soiling the general peritoneum. Such a course not only averts the risks to which the patient would be exposed by a more radical procedure, but affords her an opportunity of being restored to health with the conservation of her sexual organs.

38. **Family Periodic Paralysis.**—A case is reported by Putnam, and his theory of the disorder is given. He is inclined to consider it a functional affection due to abnormal inhibition or hyperexcitability of the nervous system in this direction.

39. **Prevalence of Cancer.**—Massey gives a statistical study in which he supports the view of the increase of cancer as stated by Roswell Park and criticised by Andrews and others. He gives diagrams showing the gradual increase for a number of years in seven American cities, showing a rise from about 35 or 36 to nearly 70 per 100,000 in less than thirty years. Extending these figures, he says, to the 75,000,000 inhabitants of the whole country, and assuming, as he thinks is correct, that there are a larger number of cases in rural than in urban districts, there must have been 49,800 deaths in 1898 from this cause, and at the present moment about 100,000 cases of the disease are within our borders. He calls attention to the general apathy which he thinks exists in regard to the subject, and the little special work that has been done toward the bettering of the condition.

40. **Narcolepsy.**—McCarthy considers this condition as simply a syndrome indicating degeneracy, and reports two cases complicating hysteria. For comparison he also reports cases of epileptoid and toxemic somnolence. He has found nothing in his study of the condition to support the idea that it is a distinct neurosis or disease. In the only autopsy reported, out of the eighteen cases collected by Weir Mitchell, the results were entirely negative. In cases like that reported lately by Skerrit and Stewart where the patient recovered from a fifty days' sleep with signs of cerebral disorder, however, he thinks an examination of the brain, were it possible, would reveal cellular changes. The present paper does not touch on the sleeping sickness of the negroes of Africa, which is due to poison generated by a parasite in the blood.

42.—See below, ¶ 152.

43.—This paper appeared previously, and was abstracted in THE JOURNAL of January 27, ¶ 38, p. 223.

46. **Cervical Flexions.**—In summarizing, Bell says: 1. Cervical flexions do not command the attention which their importance demands, and they are often overlooked as being the cause of dysmenorrhea and sterility. 2. Anteflexion of the uterine corpus is a very rare occurrence, and this, as well as corporal retroflexion, is a mechanical impossibility without prolapse. 3. The first cause leading up to anteflexion lies in, and an elongated conical cervix always means, faulty development. 4. Dysmenorrhea in unmarried and married women, with sterility in those who are married, should raise a suspicion of flexion at the internal os. 5. As doctors, we should advise the correction of flexions in both married and unmarried women, at the earliest possible moment. 6. The method of correcting them, whatever it may be, must be thorough.

52. **Otitis Media in Childhood.**—Barth gives a comprehensive general account of the condition and his method of meeting it. The more remote parts of the ear are not as likely to be involved in early childhood as in adults, and in young children in uncomplicated cases, he has nearly always brought about a rapid cure. The infection, he thinks, usually passes by way of the Eustachian tube. The symptoms differ somewhat in the child from those in the adult. There is less thickening and redness with the bulging of the drum, and the surrounding parts are not usually implicated. Spontaneous rupture of the drum is the exception in childhood. In the main the treatment is adhering to the same principles as in adults. At the first symptoms of retention of pus, puncture should be performed, and the opening kept from closing as long as acute symptoms are present. For this purpose he uses direct applications of chromic acid, removing it with a cotton probe when it has acted sufficiently. He has never seen a case where it has done damage. In view of the fact that the danger of mastoid complications is not great, he thinks we are justified in using air-pressure to force the pus through the Eustachian tube into the pharynx. Inflation from the nasopharynx may also be practiced. The use of gauze tampons is condemned. The general symptoms in children are more marked than in grown people, and sometimes completely mask the ear disease. He therefore advises a daily examination of the ears of all sick infants, from the beginning of their trouble and through convalescence. The possible mastoid complications are noticed at length.

Operative measures are not always required, but he describes his method when operation is necessary. He calls attention to the fact that the danger of wounding the lateral sinus is greater than in later life.

54. **Thyroid Treatment in Chronic Deafness.**—The use of thyroids for deafness, which has been recommended by Vulpius, is criticised by Bruck, who thinks that the dangers are underrated and the value overestimated. He has failed to obtain results in his cases, and says that according to his experience this treatment is useless in every case where other methods have failed.

55. **Tinnitus Aurium.**—The conclusions of this rather monographic paper on tinnitus aurium are as follows: 1. Almost all sounds should be designated by their pitch. 2. The pure conduction-sounds arise from the diminished outlet of sound, due to rigidity of the conducting apparatus. Inasmuch as the motility of the latter is required for hearing very low notes, its fixation is an obstacle to the outlet of these notes alone. Pure conduction-sounds are mainly placed between 16 and 256 vibrations. 3. The higher pitched sounds are due to processes in the inner ear. This statement is sustained by their occurrence in normal persons after such influences as are known to injure the inner ear, and also by the effect that therapy has on them. They may be produced by reflex from the external meatus, middle ear, and many different parts of the body; or by changes in the inner ear or the nerve itself. In rare cases, however, low sounds may, perhaps, also originate in the inner ear. 4. Hearing of complex sounds like melodies, etc., is not prima facie proof of a cerebral affection. In respect to treatment, we may formulate the rule not to perform any grave operations on the conducting apparatus when the sounds heard are high pitched, and especially not to attempt the removal of the stapes.

56. **Iodoform in Tuberculosis.**—Ferguson reports a case of pulmonary consumption, with abscess and consolidation of the lungs, relieved surgically and by the introduction of iodoform into the consolidated portion of the lungs. The patient is now apparently in good health, but the tuberculin test, when tried, was nearly fatal, so severe was its reaction.

57.—See THE JOURNAL of January 20, ¶ 39, p. 159.

58.—See abstract in THE JOURNAL of Dec. 30, 1899, p. 1655.

59.—Ibid.

62. **Brain Tumors.**—From an examination of a number of cases of brain tumors here described, Patrick concludes that the symptomatology is exceptionally variable. All the so-called general symptoms may be absent, also all the focal ones, and it may be impossible to affirm or deny the presence of an intracranial growth. When undoubted signs are present, it may be impossible to localize the tumor. In any case of cerebral disease, whether apparently functional or organic, the history should be minutely studied and every detail elicited, as the only means of avoiding gross errors. The surgery of brain tumors is exceedingly unsatisfactory in every respect, and the results far from brilliant.

68. **Surgical Diseases of Biliary Passages.**—The surgical affections noticed are suppurative cholangitis and gall-stones, chiefly the latter. Davis considers operation required for the latter in the following conditions: 1. Jaundice, long continued, with or without pain, produces so much depression that the patient's welfare is best protected by an operation. 2. Severe attacks of biliary colic with or without jaundice, occurring at regular intervals, call for operation. 3. Mild attacks of colic occurring frequently, or constant tenderness in the region of the gall-bladder, keeping the patient continuously on his guard, should be operated on if the patient's business compels an active life. 4. Whenever infection is present leading to suppuration, a prompt operation is a life-saving procedure. He reports two cases of fatal cholelithiasis, one after operation. It seems to be a rule to have a permanent cure after operation, and he thinks this is evidence of the infectious nature of the disease. In all cases he objects to immediate closure without drainage. The so-called ideal operation is anything but ideal in results.

69. **Treatment of Appendicitis.**—Summers objects to the free operation by unskilled men, and would not operate when general septic peritonitis is well under way. He also sees little use in secondary operation for removal of the appendix after discharge and drainage of the abscess. He believes there are but few cases of catarrhal appendicitis that do not recur, and that only about 50 per cent. of primary cases are safely curable by medical treatment.

71. **Surgery and Old Age.**—Ward believes that after 60 surgery is borne as well as, or better than, at an earlier age. The patients suffer less from shock, and there are fewer post-surgical complications. He reports three cases supporting his views.

73. **Pathology and Pneumonia.**—Lavender reviews the pathologic factors and conditions of pneumonia, and offers the following summary: "The mechanical interference with the circulation exerted by the consolidated area is not so important in the production of symptoms present in pneumonia as the action of liberated micro-organic toxins during the infective processes; the pathologic factors in such areas are those commonly found in defensive and reparative changes in so-called inflammation. These toxins enter the circulation and, more or less diluted, act on nerve-elements in the centers governing metabolic balance, regulating the body temperature—hence the sudden onset of pyrexia, with its precedent chill—and produce innervation of the heart, disturbing its function and nutrition. In addition such toxins in the blood, circulating in auricles, ventricles, and coronary arteries, exert a local poisonous effect directly on the heart's muscle-elements and their peripheral nerve terminations. When micro-organisms are also present in the circulation the conditions are increased, resulting fatally, with more or less generalized infection."

82. **Abdominal Sections.**—The general observations on 400 abdominal operations, related by Crile, include the consideration of the following points: the value of the blood count in preliminary examinations, the preference for the intramuscular incision, the need of the slightest possible amount of manipulation of the peritoneum and bowels, the use of strychnin to avoid shock, and alcohol when there has been absorption of toxins, and normal salt solution intravenously injected in case of great danger. He is collecting data in regard to the use of normal salt solution for a future paper, and he believes that a more lasting effect is obtained from its injection under the skin and into the rectum than from intravenous injection. From his clinical experience he is inclined to think that in many cases overstimulation is practiced, and judgment must be used in this regard. The best results in his cases were in acute appendicitis, pyosalpinx, renal and hepatic calculi. The least satisfactory were obtained in operations performed for subjective symptoms in the female; he has some failures to report in these. He thinks it impossible to make a definite prognosis in operations for subjective symptoms. As regards mortality, he finds that it decreases as experience widens. In 144 operations for appendicitis, there were 8 deaths—all patients in whom perforation had occurred without walling off. He has not yet lost one where this has occurred, nor has he had any mortality in operations between attacks, nor in attacks before infection has become extra-appendicular. In the removal of large fibroids and large ovarian tumors, he has occasionally lost a patient. In 18 laparotomies for ventral fixations, 55 for operations on the ovaries alone, 27 for operations on the tubes alone, 24 for resection of the ovaries alone, a number performed for subjective symptoms, 57 for operations on both ovaries and tubes, making a total of 181, not a death occurred. Adding to these the 128 appendectomies above mentioned, we have 309 abdominal sections with no mortality. Contrasted with this we have 56 per cent. mortality rate in acute appendicitis with perforation without walling off, or in operations performed for intestinal obstructions and some others.

83. **Croupous Pneumonia in Children.**—West's paper reviews the symptoms, physical signs, diagnosis and treatment of pneumonia in children, and especially the differences between them and adults in this regard. As regards treatment, he thinks we should be cautious and not try to do too much. There is no routine treatment except in abundance of fresh air and no forcing of food. He believes in the use of a bath at 95 to 100 degrees in cases of high temperature with gentle rubbing from three to ten minutes, repeated as needed.

84. **Early Intubation in Laryngeal Diphtheria.**—Lower pleads for early intubation in cases of obstructive laryngeal diphtheria, without waiting for cyanosis. The child is stronger, can bear the operation better if taken before exhaustion

occurs, the time for wearing the tube is lessened, the amount of nourishment is less and there is less chance for the introduction of septic matter into the trachea, and less chance of septic or bronchial pneumonia. Intubation should therefore be resorted to when the breathing first becomes labored, when prolonged expiration, slight stridor, supraclavicular retraction and marked restlessness appear. Of course, antitoxin should be used.

86. **Diabetic Ulcerations of Throat.**—Freudenthal reports cases of throat ulceration associated with diabetes, which he thinks must be rare, as he finds no special mention of such in the literature. He recognizes two different forms, the malignant, which does not yield to treatment, though he does not report microscopic findings as to its nature, and the benign ulcerations, which are manageable. It is not surprising that among the other trophic disorders of diabetes these ulcerations should occur, though he has not seen them reported. In some of his patients they look like tuberculous, and again like syphilitic ulcers, but the histories do not fully bear out such diagnoses. In his benign ones, recovery occurred without evidences of tuberculosis, and such were not found even in the malignant forms.

87. **Tuberculosis of Esophagus.**—Two autopsies are reported by Bartlett, in which extensive lesions of the esophagus, associated with tuberculosis there and in other organs, were found. He notices the comparative paucity of the literature of the subject, and explains the incidence of the disease by swallowing of the sputum, the eating of tuberculous food, extension by continuity of tissue, a possible general miliary involvement, and lymphogenic contagion, which he thinks can not be positively denied, and contiguity of tissue as illustrated by the contents of softened peribronchial lymph nodes breaking into the lumen of the tube. The surgical treatment is mentioned, and he thinks that in one of his cases it might have been practicable. He concludes his paper with a bibliography containing thirty-one titles.

88. **Influence of Atmospheric Changes on Chronic Otitis.**—Observations of fifty-one cases of otitis under different changes of weather lead Oppenheimer to the following conclusions: 1. The hearing in at least 70 per cent. of cases with chronic catarrhal deafness becomes worse under adverse weather conditions. 2. The degree of impairment of audition, as influenced by atmospheric changes, is determined to a great extent by the location and character of the pathologic process in the tympanic cavity. 3. The morbid alterations most susceptible to barometric variations are those of hyperplasia. 4. In purely atmospheric changes in the middle ear, weather variations have little or no effect on the auditory functions. 5. Atmospheric changes also impair the hearing by unfavorably affecting catarrhal processes of the upper respiratory tract and Eustachian tube. 8. All things being equal, the impaired audition in chronic catarrhal otitis is diminished more—under unfavorable weather influences—in those whose general health is below par than in those otherwise healthy.

89. **Dilatation of Heart, Complicating Nasal Obstruction.**—Thompson has found no suggestion, by any medical writer, of the possibility of obstruction of the nasal passages producing dilatation or actual disease of the heart. Some cases which have come under his care have so strongly suggested this that he reports them. He thinks a knowledge of this possibility is of great importance to every practitioner, and the physician can save himself embarrassment and injury to his reputation by careful examination of the chest in such cases.

101.—See ¶ 152, below.

102. **Tight Lacing.**—Hughes considers tight lacing a prime factor in the etiology of many urinary and pelvic disorders. The corset especially is to blame,though the effects of tight lacing may be experienced without this. Among the diseases which he considers thus produced are amenorrhea, dysmenorrhea, cancer of the cervix, caused by local irritation of the organ pressed against the floor of the vagina, miscarriages, endometritis, etc. The use of the corset is generally begun at just the time when the uterine development begins, and its action for evil is so much the greater.

111. **Surgery of the Aged.**—Oliver reports 6 cases of surgery in people from 71 to 88 years of age, in which the operation was severe. In 1 case amputation of the shoulder-joint was performed, in another amputation of the foot, 2 others were for hernia, 1 was suprapubic cystotomy, and 1 for removal of fragments of a fractured skull. One important fact appears from these cases: mere lapse of years is not a safe gauge for the estimation of the endurance of severe surgical operations. Each case is a study by itself, but age is a relative term.

116.—See abstract in THE JOURNAL of Aug. 19, 1899, p. 481.

117.—Ibid.

118.—This paper appeared in THE JOURNAL of January 13.

129. **Removal of Tattoo Marks.**—The method advised by Ohmann-Dumesnil for this purpose is as follows: The tattooed skin is first carefully shaved, if necessary, then thoroughly washed with soap and water. After this a thorough cleansing with alcohol is given, and finally a solution of bichlorid, 1 in 1000, is applied. The skin is anesthetized with a spray of chlorid of ethyl. Then the surface which is tattooed is covered over with glycerole of papoid. Next in order is to take a bunch of needles, previously prepared and rendered aseptic, and containing six to ten very fine cambric needles; tightly wound with silk thread, and dip them in the glycerole. These are then driven with a sharp blow into the tattooed part. This is repeated several times over the entire skin. It goes without saying that this tattooing must be thorough or but an imperfect result will be obtained, on account of the depth at which the pigment is found. And yet the needles must not be driven in too far, but merely far enough to draw the least quantity of blood. After this curative tattooing the glycerole is poured over the area worked on and covered over with gauze. In two or three days this latter is removed and the tattoo mark will only present a very light hazy appearance. In a very short time crusts will appear at the points tattooed with glycerole. These crusts will, in turn, fall off, and the tattooing will be gone. If the least bit remains the same process must be repeated. He has found it necessary, as a general rule, to go over certain parts a second time in order to obtain the best results. A peculiarity in reference to this is that the process does not bring about the swelling or inflammatory reaction observed in tattooing with India ink or other pigments. He explains the action here by the digestive action of the papoid liberating the pigment, and carrying it off through the lymphatics and through the upper layers of the epidermis to the surface.

134. **Living Corpses.**—Schirman's article refers to leprosy in Russia.

136. **Malignant Dysentery.**—This disorder is described by Malsch, as it occurred in two epidemics under his observation. Sixty per cent. of the cases died; treatment was very unsatisfactory. He knew of no recovery after the occurrence of black vomit, and but two after the appearance of the "gunpowder" discharge. Those who recovered rarely progressed beyond the "scraped beef" discharge stage. The second epidemic was less general, he thinks, because of precautions against infection.

137. **Hemorrhagic Malarial Fever.**—This disorder, characterized by hematuria and hematemesis, is, according to Shropshire, confined to the Anglo-Saxon race in Texas, the negro and the Mexican being immune. He is inclined to believe that freed hemoglobin acts as a systemic poison in the disease. His treatment is with large doses of quinin, beginning with not exceeding 15 grains hypodermically, as early as possible during the subsidence of one paroxysm and the appearance of the next. As a rule he gives half of the quinin he expects to give before the next paroxysm, during the latter part of the fever then on, and divides the balance into equal doses and gives them about every four hours, being sure to keep the patient well cinchonized till the next paroxysm is past due; then lessening the dose gradually. The other treatment is attention to the excretions and supporting the vital powers. He claims the best results from this treatment. In twenty cases he has had three deaths and has never seen a patient die who was thoroughly cinchonized within twelve hours of the first hemorrhagic paroxysms; the deaths occurred three to seven days after the first paroxysm, from uremia in two, each having total suppression of urine after the third day, and dying on the sixth and seventh, the third dying apparently from the toxic effect of the poison on the nervous system the third day. He never saw a second hemorrhagic paroxysm in a patient who

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was cinchonized during the first. He once saw a recurrence where cinchonism through the stomach had failed.

141.—See abstract in THE JOURNAL of Nov. 25, 1899, p. 1352.

146. **Application of Roentgen Rays to Surgery.**—In this address, delivered before the Roentgen Society, Moullin notices first the deleterious effects following skiagraphy, which he finds are due, not to the X-rays but to the ether rays, which are quite different. He thinks, however, that we have not studied these waves, but endeavored to avoid them, and they may yet be considered as important as the others. He suggests the possibility of meeting disease by their use and thinks the day may yet come when their existence will be considered of scarcely less importance than the discovery of the Roentgen rays themselves. The improvement in methods in the use of X-rays is noticed, and he shows how we are able to diagnose conditions which a short time ago were absolutely unknowable within the body, such as aneurysms, lung cavities, etc. He thinks that probably at some not very distant day, the examination of the patient's chest with the fluoroscope will be considered as much a matter of routine as that with the stethoscope is at the present day. The well-known diagnostic value of this agency in gunshot wounds and diseases of the bones is mentioned and illustrated and he believes that its future is even greater with promise than its past.

148.—This paper has appeared elsewhere as an original article: see THE JOURNAL of February 17, title 121, p. 415.

152.—This paper, here printed as an original, has previously appeared elsewhere. See THE JOURNAL of January 27, title 40, p. 221, also titles 42 and 101, this issue. An abstract appeared in THE JOURNAL of Dec. 23, 1899, p. 1615.

154.—This paper is also printed in another journal: see title 159, this issue.

159.—See ¶ 154.

FOREIGN.

British Medical Journal, February 3.

Dilatation of the Stomach Considered From the Surgical Aspect. WILLIAM H. BENNETT.—The causes and varieties of stomach dilatation are noticed in their surgical aspects by Bennett, who reports cases. He discredits the existence of idiopathic dilatation, excepting in certain cases of ptomain poisoning or digestive troubles. He thinks that such cases can be accounted for largely by a condition of the pylorus productive of obstruction that is not appreciable by manipulation of the exterior, and the other fact should be noted, that an induration may exist there, obvious by manipulation during life, but disappearing entirely after death, a sort of spasm of the pyloric sphincter. For practical purposes, he says there are two forms of gastric dilatation, the persistent and intermittent. The cause of the former will be found either in permanent pyloric obstruction or some condition existing outside interfering with the stomach's power of contraction. Sometimes, in this latter case, the cause is so remote as to be in danger of escaping attention altogether, and he narrates a case where the removal of a very minute umbilical hernia caused complete relief. Intermittent dilatation is more commonly due to an abnormal condition outside the viscus, but not implicating it. It may, however, be due to ulceration involving the stomach, and he narrates and illustrates a case where a warty pediculated growth near the pyloric orifice acted as a valve, thus causing the symptoms. The commonest cause, however, is probably movable kidney, but any floating abdominal tumor may be the causal factor. As regards diagnosis, he suggests examination for such conditions, but he has seen a suppurative ovarian dermoid and appendicitis also cause intermittent dilatation. There is a symptom which he warns against accepting as conclusive: that is the splash felt on succussion, which is also manifest in some cases of distension of the colon. He thinks it is well to remove the liquid contents of the stomach by siphonage when this appears, so as to eliminate the stomach sound. He thinks there is hardly anything leading to so many errors of diagnosis as the implicit faith placed by practitioners in this splash symptom, or the absence of liver dulness, as indicative of gastric ulcer and the tenderness over McBurney's point as indicating appendicitis. He illustrates the failure of these symptoms by cases which he reports. He alludes to the instruments and methods of Einhorn and Turck, but thinks they are still on trial and must be accepted with reserve. The treatment in cases where the symptoms amount to simply discomfort can be reasonably confined to rational medical measures in many cases, though a cure may not always be obtained. In painful cases, however, he would use surgery and not delay too long. Failing to find any abdominal condition like those mentioned above, movable kidney, etc., the cause may be assumed to be in the stomach itself and the only surgical measure is exploratory laparotomy. The conditions found generally have their obvious indications. The viscus should be opened on the cardiac side of the pylorus in order that the condition of the sphincter may be examined, and if the contraction is found, it should be forcibly stretched until it will allow two or three fingers to lie loosely in it. He believes this measure is curative in the true sense, but it should not be adopted as a last resource. It should be done before the stomach walls have undergone degenerative changes, rendering their restoration impossible.

Renal Papillectomy: Contribution to the Study of Painless Unilateral Renal Hematuria in the Young Adult. E. HURRY FENWICK.—The cases of persistent painless hemorrhage from the kidney, unconnected with specific cause, sometimes met with, have been described as renal hemophilia, hematuria from a healthy kidney, etc., and the bleeding has been ranked as due to an angioneurosis. Fenwick has been studying these cases for a number of years, and now submits his belief that in some of them at least the bleeding emanates from one of the renal papillæ and its mucosa. There is an engorgement of the papillary part of the Malpighian pyramid and its papilla is covered with a plexiform mesh of dilated vessels. He thinks this is due to localized interstitial nephritis that impedes the circulation and prevents drainage of the plexus. The site of the disease is apparent on opening the renal pelvis, a vivid red papilla stands out in contrast to the paler ones around it. The removal of this vascular papilla with a sharp scoop is sufficient to arrest a renal bleeding which no drug can control. Two cases are reported in which this treatment was adopted with perfect success, and he thinks they point to the importance of examining the pelvis with a strong light in these cases. They also show the extremely small source of an uncontrollable hemorrhage and the ease with which it can be removed.

Suture of Fractured Patella by an Improved Method. G. GLASGOW PATTESON.—The author reports a case of fractured patella treated by a single suture of D-shaped, No. 16 gauge, soft silver wire, with perfect success. Among the important points of the operation he emphasizes the following: 1. The advisability of delaying operation for a few days after the injury, until the subsidence of the more acute symptoms in the joints. 2. The thorough cleansing out of the joint; all the recesses of the synovial membrane being completely freed from clots, and the broken surfaces of the bone thoroughly cleaned. This can only be secured by the open operation. 3. The use of an easily sterilizable suture, strong enough to secure apposition by a single drilling, and so shaped as to render splitting of the bone an impossibility, and to prevent it fastening in the formation of a large and irritating loop. 4. The elevation, and not the resection, of the fibrous curtain, and its subsequent accurate suturing over the imbedded wire, forming an additional barrier underneath the skin flap against infection or irritation. 5. The early commencement of passive movement, which is thus rendered feasible, and undoubtedly greatly shortens the period of disability following the fracture—a point of paramount importance to the class of persons most subject to the injury.

The Lancet, February 3.

Day-Terrors (Pavor Diurnus) in Children. GEORGE F. STILL.—The diurnal analogue of the well-known night terorrs of children is described by Still, who reports several cases and discusses their cause and nature. In his three patients there was a family history of rheumatism, which he thinks is more than a mere accident. He is inclined to believe that they are identical with the night terrors, and, while not to be regarded as masked epilepsy, they are similar to it, being a paroxysmal neurosis, and fall into the same group of disturbances as migraine and petit mal. The immediate prognosis seems to be good, and the most important part of the treatment is removal of the exciting cause. Any intestinal catarrh or other irritation by parasites must be looked after, and it may be desir-

able to use sedatives. The good effect of bromids is almost immediate, and if combined with belladonna they produce a very rapid diminution in the number and intensity of the attacks. He says in conclusion: "If night terrors are, as Dr. Goodhart puts it, the 'slacken speed' to the engine driver, then *a fortiori* I think the day terrors must be regarded as an indication for the utmost caution in the matter both of school and of play. A child who has had day-terrors is not a child to be goaded up to the inspector's standard nor is it to be made the show-child of a kindergarten. In school and in play the child must be kept as far as possible from all excitement and mental strain. The cruelty and baneful effects of frightening such children, whether in punishment or in jest, hardly need to be mentioned here.

Some Reflections on Appendicitis. J. O'CONOR.—The author pleads for surgical interference in appendicitis. His experience with seventy-two consecutive cases has led him to attribute little value to ante-operative classifications, and he is skeptical as to the expectant cures. A condition that deserves mention is the influence of an abnormally short meso-appendix on the movement and shape of the appendix. He thinks it frequently binds down the parts so that when the cecum becomes distended a kind of tent-rope action is produced, causing awkward symptoms. It is especially dangerous when appendicitis occurs. He remarks on the difficulty of prognosis in some cases and he operates as soon as possible after recognizing the condition. In all cases he believes in removing the appendix. Search for it has sometimes revealed to him conditions that needed attention at once, and its being left has also led to serious consequences.

Medical Press and Circular (London), January 31.

Co-Relation of Sexual Function with Insanity and Crime. H. MACNAUGHTON-JONES.—This article, which has been continued through two numbers of this journal, ends with the following conclusions: 1. The co-relation of insanity and disordered sexual functions arising out of affections of the generative organs is a factor to be taken into serious consideration in the treatment of women mentally afflicted. 2. Where there is ground for the suspicion that some physical condition of the uterus or adnexa exists, which may produce or aggravate the mental affection, a careful examination, under an anesthetic if necessary, should be made. 3. In the investigation of criminal acts committed by women, either during the menopause or while the menstrual function is either active or suppressed, due weight should be given to the influence exerted by its irregularity or abeyance on her mind. In doing this, her previous history and temperament have to be considered. 4. The special dangers of the climacteric period and the symptoms indicative of threatening climacteric mania must be recollected. The principal of these are moroseness and depression of spirits, attacks of hysteria, occasional hallucinations of sight and hearing—especially of smell—suspicions with regard to relations, unjust dislikes, unfounded apprehensions of some great crime committed or injury inflicted on them, suicidal tendencies. Here again examination of the pelvic viscera is justifiable. 5. In operations on the female generative organs there is a greater predisposition to mental disturbance than after other operative procedures, but the post-operative insanity is generally of a temporary nature. 6. Women who have been previously insane are predisposed to a relapse by the development of the disease in their sexual organs, and especially to such temporary recurrence of insanity after operation on these organs. 7. In order to anticipate suicidal impulse, and the commission of crime, the disordered mental symptoms exhibited at the menstrual epochs and at the climacteric should be carefully noted, and if the discharge or the cessation of the sexual function be attended by the evidence of disease in the sexual organs, an examination of these should be made when, if gross lesions be detected, we should resort to operation.

Annales de Dermatologie (Paris), December, 1899.

Rapidly Successful Treatment of Ulcus Cruris with Products of the Bacillus Pyocyaneus. I. BUKOVSKY.—After numerous tests with the products of various bacilli in the therapeutics of local affections at the Prague clinic, it was found that the plasmin from the bacillus pyocyaneus had a remarkably beneficial effect on chronic ulcers of the leg, without regard to extent or complications or their flora, and the cure was complete in much less time than with other methods of treatment. The plasmin or protein derived from a forty to fifty-day-old culture of the pyocyaneus—Buchner's method—is diluted with the solution of potassium and hydrochloric acid. As it also contains the products of the bacillus, Bukovsky calls it simply "toxin." The patient in bed, the limb slightly raised, a compress impregnated with the "toxin" is applied and renewed two or three times a day. It causes no subjective symptoms; has no effect on the general health and does not affect the surrounding tissues, nor injure the cellular elements of the granulations. The secretions are usually dried up by the end of the first day. Its detergent action on the ulcer is very prompt except in cases of eczema, varices, cicatrices or elephantiasis, when it takes a little longer. It promotes epidermization and cures the ulcer by the formation of a solid cicatrix more rapidly formed than with any other method of treatment. All but 28 of the 100 cases treated—and all cured—were recurrences: 15 dated from over six months; 12 from one and two years and 10 over two years. The cure was complete in 68 cases, in less than a month: ten in 5; twenty days in 26 and thirty days in 37. The toxin checks the development of the bacillus pyocyaneus *in vitro*, and agglutinates the blood-corpuscles in the bodies of animals.

Bulletin de la Soc. de Pharmacie de Bordeaux, December, 1899.

Improved Method of Serodiagnosis. J. H. GUILLEMIN.—The blood is obtained with a prick from a large needle instead of the lancet. To the single drop thus secured nine drops of peptonized bouillon are added and 2, 3, 4, or 5 drops of the Eberth culture, obtaining thus a 1/20, 1/30 dilution, etc. Three drops of this mixture are then spread on a slide and set aside for two hours, to allow agglutination: Dry slowly on hot plate; treat with alcohol-ether, and dry again. Treat with 2 drops of 10 per cent. acetic acid for one or two seconds to destroy the corpuscles. Rinse lightly in distilled water. Stain with the Ziehl, rinse again and dry. Mount in balsam. The modification proposed does not take five minutes longer than the usual methods, but the stained bacilli are much more distinct and the absence of red corpuscles is also a great advantage. The agglutinating power can be gauged with precision, and the mounted preparation can be kept for comparison and reference.

Bulletin Medicale (Paris), January 10, 13 and 20.

Rare Form of Cocain Intoxication. VIBERT.—A tampon moistened with a solution of cocain was placed by a dentist in a right upper molar, in a young man of 20. In about twenty-nine hours the right hand became paralyzed, and aphasia developed, with a few hallucinations. The lower members were not affected. The aphasia subsided in three days and the hemiplegia in eight, but the hand was stiff for a month.

Therapeutic Feticide. PINARD.—"Sacrificing the child to save the mother is a legend that should disappear forever" since conservative Cesarian operation has become so successful. The latest statistics show a mortality of only 6.41 per cent. in the mothers and 5.59 in the children. Pinard reports 88 recoveries in 100 symphyseotomies. If the mother obstinately refuses an operation, "silence her with chloroform. No one has the right of life and death over a viable fetus, neither father, nor mother, nor physician, not even the superintendent of the hospital."

Journal des Sciences Medicales de Lilles, January 27.

Benefits of Puncture of Spleen. H. DESPLATS.—Two observations are described; in each the spleen was punctured by mistake, in an attempt to make an abdominal paracentesis to relieve extreme dyspnea and dropsy, one an enormously obese man, a hard drinker. The spleen in both cases was very much hypertrophied. The relief in each was immediate and both patients recovered and are in fair health to-day: 1200 c.c. of pure blood was thus taken from the man. Desplats concludes that the spleen can be punctured without inconvenience, and that it is a means of prompt relief in case of extreme venous stasis with intense dyspnea and dilatation of the right heart.

Unrecognized Lead Poisoning. H. DESPLATS.—Seven puzzling cases of lead poisoning have convinced Desplats that it is more frequent than usually accepted, and must often escape recognition. A lad of 12 years, with violent colic and constipation, no other symptoms, was under observation a long time, and was finally suspected of simulation or hysteria, until his father came under treatment for the same troubles, when

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it was discovered that they had been dealing in kindling wood taken from a white-lead factory in course of demolition. Another puzzling case, a young woman, was traced to the sheet-lead wrapper of her snuff. The only clue that led to the discovery of the lead poison in this case was the bilateral paralysis of the extensors of the forearm. In another case the symptoms were typical, but it was impossible to discover the source of the intoxication.

Presse Medicale (Paris), January 13, 20 and 27.

Administration of Medicines, and Alimentation Through the Nose. SALOMON.—When other methods become difficult, insufficient or dangerous, for any reason, Salomon states that the nasal route will be found easy and effective, and in an experience of twenty years he has never had an accident with it. The patient in the decubitus dorsal, the head thrown back and kept immovable by an assistant, if restless, or merely by the hand of the operator, one nostril is plugged with cotton and the fluid is held in a spoon near the other. At the commencement of an inspiration the spoon is tilted and the contents, gently aspirated, run down behind the glottis without entering it, the passage over the pharynx wall inducing a swallowing movement which sends it down into the stomach. In the apoplectic ictus of paralysis, in an attack of hysteria or eclampsia, for insane, rebellious patients, and for children, this method will be found of invaluable assistance. If necessary the pituitary mucosa can be painted beforehand with a 20 per 1000 solution of cocain. There is no suffocation, no cough; even brandy can be administered without trouble. If food is to be given in this way, a concentrated form is preferable, as it is a slow process: a yolk of egg in milk or something of the kind.

Acute Pott's Paralysis Without Alteration of the Spinal Cord. VERGER.—A robust man of 56 years of age noticed erratic pains in the sciatic and lumbar-abdominal regions for eight months, with no deformity nor sensibility to pressure anywhere. Acute paraplegia then developed, with retention of urine and feces and complete anesthesia of the lower members. A sacral eschar formed rapidly, and death ensued in fifteen days after appearance of paraplegia. The spinal cord was intact, but the seventh, eighth and ninth dorsal vertebræ were found the seat of extensive tuberculous lesions, with sheet pachymeningitis. The absence of severe symptoms with such serious lesions was remarkable, and the integrity of the spinal cord shows that the paraplegia must have been due to compression of the roots of the nerves.

Revue de Chirurgie (Paris), January 10.

Endotheliomata of the Bones. P. BERGER.—The study of these tumors is scarcely outlined as yet, Berger observes, and it is impossible to classify them at present in a group distinct from other varieties of osteosarcoma. We know that they are among the most malignant; the evolution is usually very rapid; ablation even by amputation is frequently followed by recurrence and generalization, although not inevitably. Lücke has reported a case cured by amputation, and Koenig another in which secondary tumors in the knee spontaneously retrogressed after amputation of the foot. Each observation on record varies histologically from the rest, but the alveolar form and the tubular form seem to predominate, and the cellular elements seem to be connective tissue cells rather than epithelial. The tumor is soft, extremely vascular, and frequently contains hemorrhagic foci or clots, mixed with débris of pathologic tissue. Pulsation has been frequently noted in them, and is about the only sign that distinguishes them from other osteosarcoma. Spontaneous fracture of the bones usually occurs. An observation is related with details: a pulsatile sarcoma of the humerus with spontaneous fracture, treated by disarticulation of the shoulder. Rapid reappearance of multiple pulsatile tumors showing a generalized sarcomatosis of the skeleton. The therapeutic conclusion of this critical review of the few similar cases on record is that we must spare no pains in locating the other localizations of the neoplasm in case of a sarcomatous tumor, and especially a pulsatile tumor of the bones. We must be on our guard against the speedy or possibly original generalizations of the evil, the effect of the same causes, acting at various points at once, which nullify the results of amputation. If amputation is determined on, it must be as extensive as possible, and in case of the humerus, interscapulo-thoracic.

Restriction of General Anesthesia for Major Operations. Non-Sensibility of the Deeper Tissues. O. BLOCH.—This important communication announces that except the skin and nerves, none of the tissues feel pain, with few exceptions. The peritoneum, for instance, can be cut, pinched, etc., without the subject's knowing that it is more than touched. Once past the skin and nerve terminals, the subject experiences no pain to speak of, no matter how much bones and tissues are incised and resected, if the nerves are avoided, which is easily accomplished, and the tissues are not dragged on to pull the nerves in them. They are like the hair, which can be cut and pinched without pain, but hurts as soon as it is pulled. Acute inflammation enhances the sensibility of the tissues and chronic deadens it. This being the case, Bloch states that as major operations are largely in sound tissue, and as we can render the skin and nerve terminals absolutely insensible with the local application of ethyl chlorid, and avoid the nerves in the deeper tissues, major operations can be performed with the aid of ethyl chlorid alone, without causing the subject appreciable pain. But as the "psychic pain" is a most important factor, this should be prevented by the administration of a very small amount of chloroform preceding the operation. Even with chloroform alone, he adds, it is almost incredible what small amounts will suffice for the most serious operations. He tells his patients to go to sleep and not to mind being handled, but notify him if they experience pain. In 252 important operations with chloroform alone, 146 took less than 6 c.c.; including 77 with less than 3 c.c. The rest inhaled less than 15, and only one required over 30 c.c. In four cases of amputation of the hip or other member, less than 6 c.c. were required. In 393 operations he used the combination of ethyl chlorid and 8 to 9 c.c. of chloroform, and reports 503 operations performed with ethyl chlorid alone, chiefly herniotomies, trachcotomies and enterostomies. Full details of the operations—all serious—are tabulated.

Accidents of Epileptic Seizures Connected with Muscular Contractions. C. FÉRÉ.—Among the accidents that have been recorded from the excessive contraction of the muscles in epilepsy are rupture of the heart, liver and diaphragm, asphyxia from contraction of the muscles of the neck, and from the swelling of the tongue after it had been bitten, which has been observed in a case of eclampsia. Fractures of the bones are less frequent than might be anticipated, and also abdominal hernia. Most of these accidents are favored by some predisposing condition, but hernia of the muscles seems to occur without any predisposing cause except the general defective build of degenerates. In an observation related, hernia of the tibialis anticus occurred through a pre-existing button-hole in the aponeurosis, and a similar button-hole was noticed on the other leg. This muscular hernia on the leg was noted in 31 out of 204 insane patients examined, bilateral in some and with five of these protuberances, the size of a nut, on one leg, in one.

Revue de Medecine (Paris), Dec. 10, 1899.

Relations Between Malaria and Epilepsy. M. DE MONTYEL.—There has been a tradition that intercurrent malarial infection affected epilepsy favorably, but fourteen observations in de Montyel's experience demonstrate the direct opposite, that it arouses latent epilepsy, aggravates it if already established, and may even produce epilepsy in the predisposed.

Tolerance for Bromids in Elderly Epileptics. C. FÉRÉ.—The aim of this article is to urge a more general use of bromids in the epilepsy of elderly persons, whose tolerance for large doses is much greater than generally appreciated. To begin with, Féré states that bromic intoxication is not dangerous under the physician's eye in the absence of special organic lesions unless it escape surveillance. The balance between ingestion and elimination is generally established by the second to fourth week. In one observation an elderly epileptic took 37 grams of potassium bromid a day and eliminated 33.80 in the urine. Individual tolerance should be determined by progressively increasing the dose at monthly intervals, commencing with 3 to 4 grams. Intolerance is more to be feared in case of arteriosclerosis. No epileptic with renal insufficiency, young or old, will derive any benefit from bromid, as it is impossible to give an effectual dose in such cases. Ten observations are described. In one case suspension was followed by recurrence of

the attacks, and the old dose no longer proved effective and had to be increased. Antisepsis of intestines and skin favors tolerance—also, Bovet has recently stated, association with nucleins. It is easier to control the bromid if no other drug is taken at the same time.

Revue Hebd. de Laryngologie (Bordeaux), January 27.

Adenoid Reflexes: Hiccough, Photophobia. THOMAS.—A boy of 6 years became subject to recurring attacks of hiccough and vomiting, attributed to every cause but the right one, which proved to be adenoid vegetations. As soon as the growths were removed the child returned to normal physical and intellectual development after three years of suffering. In another observation a lad of 15 was suddenly affected with photophobia resisting all local treatment. A spur was found on the nasal septum, and adenoid vegetations. The nervous phenomena disappeared completely after their ablation. Still another peculiar observation related is of a woman, 30 years of age, frequently affected with a tickling in the throat, slight cough and finally paroxysms of coughing and vomiting, brought on by the slightest causes, fatigue of any kind, diet, even washing the ear. All these troubles vanished after discovery and removal of a spur on the nasal septum and a hypertrophied tonsil.

Menstrual Hemorrhage from the Ear. P. BOURLON.—The writer has collected twenty-three observations. The hearing was never affected by the hemorrhage, which seems to proceed from a paralysis of the small vessels, of central origin, due to hysteria. The age of the subjects varied from 10 to 45 years; in some the hemorrhage was bilateral. It does not recur with any regularity, and is usually preceded by heaviness, pain in the head, vertigo and noises in the ear. The duration is from twenty-four hours to six days and over. The three indications to be followed are to abstain from even the slightest intervention on the ear, restore the normal menstrual flow if it has been checked and the general balance of the nervous system. In most cases the hemorrhage from the ear ceases as the vaginal flux is re-established, but it may persist with or replace it.

Berliner Klinische Wochenschrift, January 22.

Development of Ophthalmology in the Nineteenth Century. J. HIRSCHBERG.—Among the problems yet to be solved Hirschberg calls attention to the etiology of glaucoma, of trachoma and of sympathic ophthalmia; also the rôle of the schyzomycetes in inflammation of the conjunctiva and cornea. Much remains to be done, he adds, in introducing Credé treatment of neonatorum among the more ignorant classes which have a morbid preference for charlatan methods. He suggests that possibly an international trachoma congress might help solve some of these problems.

Toxic Action of Normal Urine. C. POSNER.—The toxicity claimed for normal urine, Posner establishes, is due to errors in research. If the urine is made isotonic with the blood, there is no toxicity. It is evidently due to the difference in molecular concentration between the two fluids. The research reported in this communication emphasizes the importance of osmotic relations in all injections and infusions.

Pneumatic Therapy: Compressed-Air Cabinet. J. LAZARUS.—The experience of twenty-five years enables Lazarus to define the indications for treatment with compressd-air as pleuritis, chronic infiltrations and shrivelling of the lungs; chronic bronchial catarrh, asthmal catarrh with consecutive disturbances in circulation without any special heart disease, chlorosis and anemia. It is counterindicated in all acute and febrile affections, in case of rigidity of the thorax from ossification of cartilage insertions, and great caution is necessary in applying it to persons with arteriosclerosis.

Centralblatt f. Chirurgie (Leipsic), January 27.

Strophanthus As Prophylaxis for Chloroform Narcosis. L. v. FEILCHENFELD.—The writer has frequently observed that small doses of strophanthus relieve the feeling of distress, palpitation of the heart and acceleration of the pulse which occur in otherwise healthy persons on occasions of great excitement, actors making their début, students at examinations, etc., frequently attended with a paralyzing weakness, vertigo, tendency to faint, etc. The subjects who had previously taken bromid at such times with no effect, declare that the strophanthus completely restores their physical composure and that they experience none of the symptoms mentioned. He has consequently been applying it with the most favorable results in preparing patients for important operations. The psychic disturbance at times is so great on the eve of an operation that the patients can neither eat nor sleep and even a tendency to suicide has been observed. This condition of excitement is a poor preparation for chloroform narcosis and deserves more attention than an old, compensated heart insufficiency. The physical manifestations can be obviated and tranquillity restored by 5 or 6 drops of tinctura strophanthi immediately after the last meal, the two evenings preceding the operation, and on the morning of the same day.

Muenchener Medicinische Wochenschrift, January 16 and 23.

Butter in Chronic Constipation of Children. H. DOERFLER.—Chronic constipation in otherwise healthy children is not a disease but an obstruction of the intestines from too much food, Doerfler asserts, in most cases. This condition can be simply and effectively terminated by giving the child fresh butter, a half to a teaspoonful during the first two or three months of life until normal defecation is restored and then this dose every second day. Between the third and fourth month give two or three teaspoonfuls a day, until relieved, and then every second or third day. From five months to a year one to three tablespoonfuls every two or three days; over this age, give as needed. The butter must be given unchanged; not warmed nor mixed with any substance, as this alters its composition. In an experience of six years every child has taken the butter with relish without exception. It increases the nourishing elements of the food in small compass, and is the nearest approach to milk; a part is readily assimilated and the rest is eliminated, stimulating peristalsis as it passes through the intestines. Pale, pasty children become red-cheeked and hearty, and the benefits of this butter treatment are evident up to the fifth and sixth year.

Local Disposition. Cold and Hardening. G. KISSKALT.—This communication, from the Institute of Hygiene at Würzburg, presents facts to support the theory that arterial hyperemia increases the disposition to disease. We now positively know that the opposite condition—Bier's venous stagnation—has the opposite effect. The action of cold, by causing constriction of the cutaneous vessels and hence inducing arterial hyperemia of the internal organs and especially of the mucous membrane of the respiratory passages, is one means of producing this increased disposition to infection. Hardening the body by daily application of cold water causes the vessels of the skin to react less promptly to every cold stimulus, so that the predisposition to disease on the basis of arterial hyperemia occurs less readily.

Suture of the Heart, a Classic Operation. E. ROTTER.—In order to bring this operation within the reach of all practitioners, Rotter has been studying and testing operations on the cadaver and on dogs, to find a simple, easy method of opening up the heart extensively and rapidly, adapted to all kinds of injuries of the heart and practicable without much assistance. He now announces that he has succeeded in combining all these desiderata in a square barn-door flap, the incisions running from 1.5 cm. from the left margin of the sternum along the edge of the third and fifth rib for 10 cm., the two incisions connected by a third, nearly vertical, just inside the nipple. The incisions are carried through the entire thoracic wall and open the pleural sac. The ribs are sawn along the vertical incision and the square flap thus formed is turned back on the sternum by dislocating the ribs in the insertions. The opening is about 12 cm. diagonally across. The ends of the fourth and fifth intercostal arteries are all that have to be ligated. The lung is pushed back out of the way, and the pericardium is incised along the diagonal from the upper inner to the lower outer corner. The heart is thus fully exposed and in the most satisfactory manner; it can even be lifted out for examination and suture, and the disadvantage that the pleura has to be incised is trifling compared to the many advantages of this flap and the fact that the injury to the heart scarcely ever fails to involve the pleura also.

Therapie der Gegenwart (Berlin), January.

Treatment of Cancerous Stricture of Esophagus with Permanent Sound. H. CURSCHMAN.—Life is lengthened and rendered bearable as possible with the sound used by the writer. It is only long enough to comfortably pass the stricture. The

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sides are straight until at the very top, where they flare. It is held by a single string fastened to the ear. The growth of the cancer does not seem to be accelerated by the irritation of this foreign body, but rather checked. The sound is made of silver or hard rubber, and is inserted with an elastic sound passed through it, with a ball fitting into the flare.

Zeitschrift f. Klinische Medicin (Berlin), 1899, 4 to 6.

Urotropin. A. NICOLAIER.—Eighteen observations are described at length and the literature reviewed, with the conclusions that urotropin is not only successful in affections of the urinary passages of the most various kinds and etiology, but is also effective in the treatment of the uric acid diathesis and occasionally in phosphaturia. It only fails in purely tuberculous affections of the urinary passages. The dose is 0.5 gm. twice to four times a day.

Tendon-Muscle Transplantation for Functional Cure of Old Peripheral Nerve Paralysis. W. MUELLER.—A young man, receiving 75 per cent. indemnity accident insurance for traumatic radialis paralysis, had the function of the forearm restored by transplantation of the tendon of the musc. flexor carpi ulnaris on the dorsum of the hand, 2½ years after the traumatism. All of the extensor tendons of the fingers were cut and sutured to the tendon of the flexor ulnaris, the hand in extension. No improvement was perceptible for three months, when conditions gradually improved until in ten months the hand, thumb and fingers could be voluntarily stretched, the hand raised, and easy work, such as gardening, could be done. The hand deviated toward the ulnar side at each extension and this was remedied later by freshening the tendon of the flexor carp. rad. longus., and fastening it to the tendon of the abductor poll. longus and the extensor carp. rad. longus, with the hand in radial extension. The results are now completely satisfactory; the patient can bring separate portions of the muscle to act separately on the thumb, index and hand as needed, and the hand subjectively "feels all right."

St. Petersburger Medicinische Wochenschrift, January 6.

Case of Blindness for All But Blue Objects. K. NOISEWSKI.—A woman 42 years old, married, healthy, a well-treated syphilis twenty years before, came to the clinic with vision 0 on both sides, from white atrophy of both optic nerves, but retention of reaction of pupils to light, accommodation and convergence. She could not tell night from day, nor perceive whether a lamp near by was burning or not, and yet she could distinguish, without trouble, even the smallest blue objects at a distance of 1½ meters, a blue flower, or small blue bottle, a ribbon, etc. This unique case can only be explained with the assumption that perception of the different colors occurs in the different layers of the retina, possibly violet and blue in the inner and red in the outer layers.

El Siglo Medico (Madrid), January 14.

Infant Mortality in Spain. Dr. Gimeno, a medical member of the Spanish legislature, stated in a recent address that 40 per cent. of all children born in Spain die under 5 years of age. In Saragossa 75 per cent. die under 15. In Madrid the mortality has been reduced to 29 per cent.

Annales de L'Institute Pasteur (Paris), Dec. 25, 1899.

Study of the Plague at Oporto. A. CALMETTE.—This official report recommends, among other measures for the extermination of rats and mice, which it urgently preaches, the use of the Danysz virus to inoculate the rodents with an infectious disease that does not affect other animals. This has proved very effective in some cases, especially against mice. Suspected cargoes of grain should be shovelled out by hand or put through a coarse sieve, under close supervision, to detect carcasses of rats.

Bacteriology of Ozena. F. PEREZ.—The writer has succeeded in isolating a hitherto undescribed cocco-bacillus from cases of fetid ozena, which is pathogenic for small animals, and inoculated in the ear of rabbits produces an intense nasal secretion, sometimes hemorrhagic, the principal and almost the only lesion being on the pituitary mucosa, and invariably resulting in atrophy of the turbinate bones as in genuine ozena. The "cocco-bacillus fetidus ozenæ," as he proposes to call it, is a facultative aërobic and anaërobic, non-motile one, takes stains readily, is not decolored by the Gram method, does not liquefy gelatin nor ferment lactose, but its most characteristic feature is the strong fetid odor, most prominent in peptonized bouillon and gelose cultures. He isolated it seven times in eleven cases of fetid ozena and once in eleven non-fetid cases. In this latter case the bacillus cultures were not fetid. His research included fifty-four cases of nasal affection and nine normal subjects.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, N. J., June 5-8.

Medical Society of the Missouri Valley, Hamburg, Iowa, March 15.

Medical Association of the District of Columbia, Washington, April 5.

Western Ophthalmological, Otological, Laryngological, and Rhinological Association, St. Louis, April 7-9.

Tennessee State Medical Society, Knoxville, April 10.

Florida State Medical Society, Orlando, April 11.

Mississippi State Medical Association, Meridian, April 11-13.

Medical Society of California, San Francisco, April 14-16.

Medical Association of Alabama, Montgomery, April 17.

South Carolina Medical Association, Charleston, April 18.

Medical Association of Georgia, Atlanta, April 18.

Louisiana State Medical Association, New Orleans, April 19-21.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 24.

Texas State Medical Association, Waco, April 24.

Paris Surgical Society.—This is an exclusive organization, its numbers limited and only surgeons connected with hospitals are eligible to membership. Its members have recently contributed funds to erect a special building for its meetings, which was completed and dedicated last month, 12, rue de Seine, a model of convenience for the purpose, and the envy of all the other societies.

Congress of History of Science.—Among the 122 congresses officially organized in Paris this year, we note, besides those already mentioned, an international congress of the history of the sciences, to be held July 23 to 28: Secretary, Dr. Sicard de Plauzoles, 10, boulevard Raspail. One of the subjects to be discussed is: "What medical discoveries explain the prodigies of antiquity?"

International Congress of Medical Electrology and Radiology.—At the request of the French Society of Electrotherapy and Radiology, the International Congress of Medical Electrology and Radiology is connected to the International Congress of 1900. A commission composed of: Professor Weiss, University of Paris, president; Apostoli and Oudin, vice-presidents; Professor Doumer, University of Lille, general secretary; Moutier, secretary; Boisseau du Rocher, treasurer, and of Professor Bergonié, University of Bordeaux; Professors Bouchacourt and Branly, Catholic Institute of Paris; Larat, Radiguet, Villemin, surgeons of the hospitals of Paris; has been asked to assure its organization. This congress will meet in Paris, July 27 to Aug. 1, 1900. For further information, address Prof. E. Doumer, general secretary, 57 Rue Nicolas-Leblanc, Lille.

Congress of Professional Medicine and Medical Ethics.—The aim of this congress, as already announced, is to establish on a broad, practical, international basis, matters affecting the profession in purse and dignity, and to approach a solution of the problems of club and lodge practice, hospital abuse, etc. The subscription is 15 francs, or $3, for participating members, and $2 for non-participating. This subscription entitles members to a copy of the proceedings, which will well repay even those who are unable to attend the Congress, besides the satisfaction of contributing moral and material support to the organizers of this novel attempt to promote the organization and solidarity of the profession on such broad lines. The addresses are to be by men who have had wide experience in successfully combating the commercial spirit of the day, and many are now connected with active and prosperous organizations engaged in solving economic problems affect-

ing the profession individually and collectively. The date is July 23 to 28, immediately preceding the International Congress of Medicine. Members are entitled to a reduction of 50 per cent. on French railroads and of 30 per cent. on the regular rates of the "Compagnie Transatlantique," if the subscription is paid by June 20 at the latest. Treasurer M. P. Masson, Boulevard Saint-Germain, 120, Paris. For titles of addresses, etc., see THE JOURNAL, 1899, xxxiii, pp. 1098, 1172 and 1444. We have received from the president the circulars of four agencies which make a specialty of supplying lodgings for strangers. Advantageous terms have been secured from each and he adds that their work on the occasion of preceding congresses is a guarantee of satisfaction. The Agence des Voyages Modernes, rue de l'Echelle, 1, offers to supply a comfortable room for 6 francs, or $1.20, and upward a day; room and board, three meals a day, wine at lunch and dinner, for 15 francs a day; also furnished flats at prices varying according to location. Rooms must be taken for a week at least and flats for a month. The Agence Desroches, Rue du Faubourg Montmarte, 21, will charge 20 francs, or $4, for the first day, which includes transportation from the depot and care of luggage, and 10 francs, or $2, a day thereafter. This sum includes room, lights and breakfast. The Société Française des Voyages Duchemin, Rue de Grammont, 20, offers a room for 6 francs a day and upward, or room and board for 12 francs, about $2.50, with transportation of luggage. The Voyages Pratiques 9, Rue de Rome, offers the following rates if application is made a month in advance: to individual members of the Congress, 6 francs 50, about $1.30 a day; for a certain number, 2000 persons, lodgings for 5 francs 50, about $1.10, a day for each; for 1000 persons, 4 francs, or 80 cents, and for 500 persons, in dormitories, 3 francs 50 and 3 francs, about 70 and 60 cents, a day for each individual. Agents and interpreters of this company meet the ship and trains at Paris, with omnibus and baggage service. Small furnished flats of three rooms and more can also be supplied for $55 a month and upward, and private houses for persons wishing to keep house during a longer stay. This society rendered effective service at the Moscow international congress and others at Rome, Madrid, etc., and supplies information free of charge on any subject in its line.

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Chicago Academy of Medicine.

Feb. 9, 1900.

CARCINOMA IN CATTLE.

DR. LEO LOEB read a paper with this title. Preparatory to certain investigations, he first investigated the occurrence of carcinoma in cattle. These investigations were made conjointly with Dr. Jobson, government meat inspector. The results are based on the statistics of cases of carcinoma in cattle at the Chicago stockyards, since July, 1898. The principal organs were examined post-mortem. In 16 cases from September, 1899, to February, 1900, more extensive post-mortem examinations were made, in a number of instances microscopic ones of such organs and lymphatic glands in different parts of the body as presented a suspicious appearance.

They found carcinoma in cattle in two places, namely, in the inner canthus of the eye and on the vulva. All the cases thus far observed, with the exception of one case of carcinoma of the vulva, were carcinomata of the inner canthus of the eye. As to how often the disease is found in cattle, from July, 1898, to January, 1899, but four cases were observed, and these were seen during October. There were no cases in November and December, 1898. From Jan. 1, 1899, to Jan. 1, 1900, they counted 48 cases of carcinoma. In the same year 2,514,446 head of cattle were received at the stockyards, so that there was one case in every 50,000. This only gives an approximate idea of the frequency of the disease, and only on the supposition that as many carcinomatous as non-carcinomatous cattle are delivered at the stockyards. Of 60 animals examined, 59 were cows, and 1 a steer about six years old. He was perfectly white. This apparently remarkable fact as to the distribution of sexes will be explained if we consider the circumstance that steers are usually killed when young, often before the sixth year, the cows becoming much older. All the cows coming to the stockyards, with carcinoma, were from six to fifteen years of age, therefore of greater age than steers usually attain.

How does the development of carcinoma affect the general state of health of the animal? All those affected with carcinoma were very much emaciated. Loss of weight was already present when the carcinoma was not very much ulcerated. A number of inquiries were made as to the rapidity of development of carcinoma, the external circumstances that might influence the disease, and the first changes that are visible. Through the kindness of Dr. Holcomb, their attention was directed to a cattle ranch near Cheyenne, Wyo., whence they received some information. Here is a ranch which keeps about a thousand cattle, about two thousand coming and going during the year. On this ranch were found every year one or two cases of carcinoma of the eye. This observation covers a period of ten years. The ranches in the adjoining district of equal size were practically free from carcinoma. Thus, it seems that carcinoma of the inner canthus of the eye is almost endemic on this one ranch.

The authors then alluded to the development of carcinoma of the eye, known among veterinarians under the name of "fungus hematodes." They saw two cases where the lesion was still in a comparatively early stage, and described one such case. If the carcinoma is far advanced, it penetrates into the bone and may break through in different directions. For instance, the tumor may penetrate the antrum of Highmore. In some cases it may be observed how the carcinoma begins to penetrate into the eye. Later on the eye becomes entirely destroyed. Of 32 cases examined, the eye was found destroyed in 6 cases, the bone affected in 15.

As to metastases, in 32 cases, where the lymphatic glands and the inner organs were carefully examined with this point in view, the retromaxillary gland was affected twenty times, and as a rule changed into a large metastatic tumor with remnants of lymphatic tissue, twelve times. In 12 of the least advanced cases the lymphatic glands were free from metastases. The macroscopic findings were confirmed in a number of instances by microscopic examination. Once they found the submaxillary gland, once the retropharyngeal, once the interior mediastinal gland similarly enlarged and changed.

They also examined, microscopically, a number of lymphatic glands in other parts of the body—cervical, submaxillary, bronchial, mediastinal, portal, and mesenteric glands with somewhat suspicious appearance—always, however, with negative result. Similarly they could find neither macroscopically nor microscopically any metastasis in the inner organs. In one case, in which they were induced to microscopically investigate the lungs with the bronchial glands, they found signs of tuberculosis in both.

In two cases of carcinoma there were present in the same animal two carcinomata, that of the vulva already mentioned, while in the second case the inner canthus of both eyes was affected, the disease being more advanced in one eye than in the other. In the case of carcinoma of the vulva, they found, by macroscopic and microscopic examination, distinct carcinomatous nodules beneath the mucous membrane. Whether this is to be regarded as an autoinoculation in the case of carcinoma of the vulva, possibly caused by the rubbing of the head at the vulva, or whether there were certain constitutional conditions necessary for the occurrence of carcinoma which made multiple occurrence easy, must at present be left undecided.

Histologic examination showed the carcinoma of the eye to be one of stratified epithelium with horny changes and epithelial pearls. They found stratified epithelium arranged around the hairs which penetrated into the deeper tissues, forming horny masses in the center of the alveoli. In many cases they were able to see the mucous membrane of the membrana nyctitans intact over the tumor. In other places a secondary union of the tumor and mucous membrane had taken place. The tumor itself, during its progressive penetration into the surrounding tissues, on the whole retained its character but sometimes they found loosely arranged, hyaline-appearing carcinomatous cells, instead of the horny changes inside of the alveoli. The character of the tumor also remained unchanged in the metastases of the lymph glands.

Carcinoma of the vulva shows, on the whole, the same character as carcinoma of the eye. But this alone does not warrant the conclusion that the one carcinoma has been transplanted from the other, because, already in the normal mucous mem-

brane, they had found stratified epithelium at both places.

The following deductions were drawn:

1. Through these investigations physicians and scientists may get an insight into the relative frequency of tumors in man and in animals. The annual death-rate of the human race per million of all ages, from 1891 to 1895, in England was 712, that is, .7 per 1000. In 1899 one case of carcinoma was found in 50,000 cattle. If the further collection of statistics should show a similar proportion in the following years, carcinoma in cattle would be about 1/50 to 1/70 less frequent than in man.

2. The place where carcinoma is found most frequently in cattle is where, through the running of the tears and the motion of the membrana nyctitans, foreign bodies entering the conjunctival sac are deposited and can easily be kept back by the hairs of the caruncula. This is favored by the fact that in cattle the caruncula lies somewhat deeper, just between the openings of the superior and interior lacrimal ducts, and the hair may also favor the retention of foreign bodies at this place. But whether the foreign bodies cause the development of carcinoma by continuous irritation, or whether the foreign bodies, which are the cause of carcinomata, be certain parasites, their findings do not allow them to decide. So far, they have been unable to ascertain whether any peculiar conditions existed on the Wyoming ranch in regard to the water-supply or the feeding of the animals. The question must be left undecided for the present as to whether these observations can be explained by infection from animal to animal, or by infection from an external agency. But certain observations previously reported, especially by Behla in the *Centralblatt f. Bacteriologie*, proving in human beings the endemic occurrence of carcinoma in the suburb Kalau, seem to be more easily explained by parasitic infection. Behla believes that certain organisms of myxamebic character, which infect certain vegetables, are the cause of this endemic occurrence of carcinoma, but he, as well as others before him, emphasizes the possibility that different carcinomata may be caused by different organisms. Fiessinger, Noel, Armaudet, Sorel, Vigues and Gueillot, had already, before Behla, reported cases of endemic carcinoma in France. Fiessingen and Noel believe that certain fungi are responsible, which are found especially on trees, and which cause certain tumor-like formations. The proprietors of the ranch with which they have been in communication denied knowledge of any peculiar conditions existing on the farm. Attention is especially called to these questions by observations of the almost endemic occurrence of carcinoma on this ranch, but only by further researches can it be decided whether a parasitic cause is present. So far they have not found in the carcinoma, any coccidia or yeast-like bodies, the appearance of which could not just as well be explained as products of the epithelial cells. Certainly the investigations of the last ten years have, at least, proved, by simple microscopic examination and staining, that the question as to whether we have to deal with parasites or with metamorphosed cells, or parts of cells, can not be decided. An interesting discussion of the facts concerning the parasitic origin of cancer is to be found in a recent paper of Dr. Roswell Park.

3. Besides the external, exciting causes, there were other factors of importance found in the development of carcinoma; for instance, the age and sex of the animal. In this connection, it is well to remember that the statistics of Finkelburg and Spencer Wells and others show that in the human race the female sex is more frequently affected with carcinoma than the male, although in the human race carcinoma of the face and extremities seems to be more frequent in males, probably because they are more exposed to injuries than females. But difference of exposure to injury does not apply to cattle. Here it is found more frequently in the female. In young animals all these external irritations, or parasites, if the latter be present, do not seem to be able to produce carcinoma.

4. Another observation of general interest is the constant absence of metastases in the deeper lymph glands or other organs, although the metastases in the retromaxillary lymph glands very often attain great size.

The question arises, does secondary destruction of carcinomatous epithelium in the deeper lymphatic glands take place? Frequently necrotic areas and hemorrhages are found in the lymphatic glands, showing presence of pathologic processes.

DR. ALEXANDER HUGH FERGUSON asked whether any evidences of cancer had been found in the muscular tissue of cattle examined, and said that in carcinoma of the breast the exact extent of cancerous involvement could not be determined. On this account Halsted, of Baltimore, and other surgeons had taken away the pectoral muscles very extensively in operating on cancer of the breast. He had done this himself a number of times, but more recently he has retained more and more muscular tissue, simply removing the fascia and lymphatics.

DR. JAMES G. KIERNAN said there was a commercial element of error in regard to statistics of cancer in cattle, which had a tendency to control the report of cases. Before any details as to the comparative frequency of disease in cattle are taken up, this commercial element of error should be eliminated. Even in tuberculosis this element had to be considered. The Illinois Dairymen's Association denies that tuberculin is a reliable test of tuberculosis in cattle, and claims that this disease is not nearly as frequent as the tuberculin test and autopsies indicate. These autopsies the dairymen were not able to control. Had they been, tuberculosis would seem infrequent in cattle, as does carcinoma. From a general standpoint of the ordinary histologic view of carcinoma, whether the disease occurs from bacterial or parasitic factors, it is a return to the atavistic condition in which the cells have undue tendency to reproduce themselves. Considering these factors, one would be safe in believing, unless there were strong evidences in the other direction, that carcinoma is frequent, compared with man and the anthropoid apes, among cattle. In the presence of the commercial element he claimed that the physician was hardly justified in assuming that cancer is as infrequent among cattle as the statistics cited would indicate.

DR. LOEB, in closing, said that the masseter muscle was distinctly infiltrated with carcinomatous masses. In reference to the remarks of Dr. Kiernan, the proportion of cattle having carcinoma can not be definitely determined. There are some facts which make it probable that carcinoma in cattle is not much more frequent than the essayist found. Every animal is examined by two experts. The observations of the most experienced veterinarians with whom the essayist communicated on this subject pointed in the same direction. Observations of carcinoma in cattle have been rarely made, although in many cities a thorough meat inspection is carried out.

LATERAL URETERO-RECTAL ANASTOMOSIS.

DR. REUBEN PETERSON made a preliminary communication to the Academy on this subject. He said: "At a former meeting of the Academy, during the discussion of Dr. Lydston's paper, I referred to some recent experiments I had been making in uniting the ureters with the rectum. The ureters were passed under the mucle for a short distance and then made to penetrate the mucosa, various methods of suturing being employed to secure union between ureter and bowel wall. Infection of the kidneys, as shown by bacteriologic and microscopic examinations, occurred in all the animals that recovered from the primary operation. It was found that the infection in nearly every instance was proportionate to the amount of stricture of ureters entailed by the operation. Thinking that ureteral stricture and subsequent hydronephrosis, by slowing of the stream of urine might offer increased facilities for the passing upward of the colon bacilli, I set to work to devise an operation whereby ureteral stricture could be avoided. To those who have endeavored to unite the ureter with the rectum by passing the former through the wall of the latter, it is evident that, owing to the compressibility of the ureteral wall and the excessive muscularity of the rectal wall, it is only a chance if stricture does not take place, either at the time of or subsequent to the operation. Hence the two organs must be united by a lateral anastomosis if stricture is to be absolutely avoided, because here the opening can be made as large as required.

"With the assistance of Dr. Connell I finally succeeded in making a lateral anastomosis between ureter and rectum, employing a modification of the right-angled suture. The first few animals died because I failed to cover the line of sutures with peritoneum. This is necessary because the ureter can not be safely punctured by the needle as can the gut wall, and must be protected by peritoneum for fear of subsequent leakage of urine into the peritoneal cavity. For this reason I do not be-

lieve the operation devised will ever be practicable for the human being, the danger of leakage even when the sutures are well protected being too great. The experiments were made for the purpose of determining if freedom from stricture had any influence in preventing an ascending infection of the kidney.

"The specimen which I present for your inspection effectually answers this question in the negative. The dog from which this kidney was removed was operated on Nov. 18, 1899. The left ureter was united to the rectum in the manner described. The peritoneum and loose connective tissue about the ureter were stitched along the line of suture. Nine days after the operation he was found dead. The left kidney was enlarged to double the size of the right. The pelvis of the kidney was dilated and contained pus, the bacteriologic examination of which showed the presence of colon bacilli. The ureter was not dilated, and the opening into the bowel was patent and allowed water injected into the pelvis of the kidney to pass freely into the rectum. The uretero-rectal anastomosis was perfect and there was no leakage of urine into the peritoneal cavity. The specimen shows the changes typical of pyelonephritis.

"The infection in this case took place even quicker than in the experiments where the ureters were buried in the muscles of the bowel and where a certain amount of ureteral stricture existed. So far as this case is concerned, a free flow of urine did not prevent any ascending infection.

"In addition to my experimental work on living animals, I am carefully studying microscopically the course of the ureters through the dog's bladder wall to see if the direction of the ureters, the muscles with which they are surrounded, or the formation of the ureteral orifice can explain comparative freedom from infection when the ureters are implanted together with the trigonum into the rectum. The results of these studies will be given later when my experimental work is reported in detail.

"We know that Maydl has transplanted the trigonum together with the ureteral orifices into the rectum in a number of cases with success and his patients have lived a number of years and are apparently well. None of these cases have been examined post-mortem, and it is not certain that infection of the kidneys has not taken place. The only experimental work upon dogs with this operation that I have been able to find in the literature resulted in the immediate death of the animal, hence an opportunity of studying the condition of the kidneys was not afforded.

"This specimen which I show you now is from a dog where the ureteral orifice and a portion of the trigonum have been implanted in the rectum on one side and on the other ureter cut away from the bladder and anastomosed with the rectum according to the old method I have spoken of. The differences in the two kidneys are apparent to the naked eye. The kidney where the ureteral orifice was implanted is normal in appearance, while the other shows the characteristic changes of pyelonephritis. Bacteriologic examination was negative in the first kidney, and showed large quantities of colon bacilli in the other kidney. The dog lived ten days and died from peritonitis due to a mural abscess.

"The reason for the large primary mortality in animals subjected to Maydl's operation is because of its complexity. I have read a description of the operation a number of times, and I find it far from clear. I have devised an operation for the anastomosis of the trigonum together with its ureteral orifices with the rectum, which is simplicity itself, and any surgeon who can successfully perform an intestinal anastomosis, can perform the operation with ease. The majority of the dogs I have operated upon by this method are living, and at some future time will be killed and the condition of their kidneys carefully studied."

DR. A. H. FERGUSON said that the method pursued by Dr. Peterson impressed him as being very favorable and much easier to perform, but he is of the opinion that any implantation of the severed ureter or ureters into the rectum will be followed sooner or later by ascending infection toward the kidney. Infection ascends in the human being when there is cystitis and when there are germs present in the bladder, consequently it will likewise ascend where there are germs constantly present in the rectum.

DR. R. C. TURCK agreed with Dr. Ferguson that any operation of transplanting the ureter into the rectum offers very little chance against subsequent infection.

DR. F. G. CONNELL said he had been conducting experiments on implantation of the ureters into the rectum by different methods with a view to determine which is the best method, and he has found that in all cases there was either stricture or infection resulting. One ureter can be transplanted into the rectum and the dog recover from the operation, but he has been unable to transplant both ureters at the same time and have the dog recover. If recovery did follow the operation and the dog lived a few days, stricture with pyonephrosis was invariably found. He could only say that from his experience the Maydl operation is *the* operation of transplanting the ureters into the rectum.

DR. WILLIAM L. BAUM agreed with the conclusions drawn by the essayist from the result of the essayist's investigations, which he had followed closely during the last two years. He is rather impressed with the result of vesicorectal anastomosis with the Frank button or coupler, as performed by Dr. Frank, whose work he thinks has demonstrated the fact that after the first few days the bladder mucosa partakes very much of the characteristics of the rectal mucosa, and it is probably due to this fact to a certain extent that the Maydl operation acquires a greater amount of resistance to any ascending infection. There is hardly any doubt that the Maydl operation, as modified by Dr. Peterson in his experimental work, is a decided advantage over the operation as originally devised by Maydl.

DR. PETERSON, in closing, said the results of his experimental work would soon be published in detail. After transplanting the trigonum into the rectum the anastomosis between it and the rectum seemed to be perfect, and yet the dogs only lived a few days. Then, he had one of the anastomoses subjected to microscopic examination and it showed evidences of necrosis. It occurred to him that possibly the blood-supply in the dog was different from what it was in the human being. He knew from his previous experiments that there was a branch from the renal artery running along the ureter and supplying it, which reached the trigonum, and he took it for granted that the trigonum was supplied by that ureteral artery. After removing a dog's bladder and blowing it up in the laboratory with air and studying the blood-supply he found that that of the trigonum came from two vesical arteries which are given off from the internal iliac. These arteries he had tied in order to control the hemorrhage which is encountered when the flap is cut off. So in his next experiment he refrained from tying these arteries and the problem of the blood-supply was solved, in that he had four dogs live out of six, and in the two dogs that died death occurred from causes that were not referable to the transplanted flap. Both in the dog and in the human the blood-supply of the trigonum, combined with the ureteral blood-supply, is sufficient to nourish the flap and prevent sloughing.

His object in conducting these experiments was to see whether it was a justifiable operation to implant a ureter, cut off from the bladder, into the rectum. He did so because he had a case in which he wanted to remove the bladder and before doing so was anxious to determine whether it was a justifiable operative procedure. His experiments have proved conclusively, to his mind, that it is an unjustifiable one. He has performed in all seventy experiments on the ureters in dogs.

He corroborated the point brought out by Dr. Connell, namely, that it is difficult to implant both ureters into the rectum and have the animal live. Out of some thirty dogs he only succeeded in saving five where this was done.

Philadelphia Academy of Surgery.

Feb. 5, 1900.

LIPOMA OF HAND.

DR. THOMAS G. MORTON reported a case of lobulated lipoma of the hand, with illustrations. The interesting feature was the locality and the manner of growth of the tumor, which occurred in a woman 46 years of age. Development first began on the dorsal surface, finally appearing on the palmar. Considerable pain was complained of over the region. The tumor, from its consistency, appeared to be cystic. An incision demonstrated a fatty tumor, lobulated in character, the two

portions of which were connected by an isthmus of tissue. These tumors are frequently mistaken for cysts or hygromas. In the latter the growth extends over the annular ligament, while in lipoma this ligament generally limits its growth in this direction.

DR. W. J. TAYLOR said he had never seen a lipoma in this locality, but had seen one on the foot, the size of a marble; it was removed, with permanent cure. In this instance pain was a common symptom.

EXCISION OF ASTRAGALUS.

DR. T. G. MORTON also exhibited patients showing the results of excision of the astragalus. In the first instance the operation was done for a fracture of the bone. In one, in which the operation was done for talipes equinovarus, ten years ago, the foot was straight and the joints were movable. In none of his cases, which numbered nearly a hundred, had he seen ankylosis following this operation.

DR. DEFOREST WILLARD thought that ankylosis following this operation was an extremely rare condition.

PANCREATIC CYST.

DR. JOHN B. DEAVER reported a case of this condition, of which he has seen only two. This patient was a woman who had borne four children; her family history was negative. Her present illness began twelve years ago, first manifested by an increase in weight. There was no epistaxis, but she suffered from hemorrhoids, prolapse of the vagina, and constipation. The heart and lungs were normal. The abdomen was considerably enlarged and measured fifty-two inches in circumference. Ascites was present, and dulness was found in the abdominal region, which was not movable. The condition was not positively diagnosed. An exploratory incision was made and a large collection of oily fluid evacuated. The condition was then found to be one of pancreatic cyst, which was incised and packed with gauze, and the patient made an uneventful recovery.

DR. T. S. K. MORTON spoke of a case of cyst of the pancreas which occurred in a woman who had suffered from indigestion, and later followed by the occurrence of a tumor in the epigastric region. The fluid evacuated converted starch to glucose. As in Dr. Deaver's case, he incised and drained and the patient recovered. He believes that surgeons as a rule adopt drainage rather than total enucleation.

CARCINOMA CASES.

DR. J. B. DEAVER also exhibited four specimens of carcinoma of the rectum, removed by the Kraske operation. In two he was able to unite the cut ends of the bowel, and the patients now have good sphincteric action. He does not approve of a preliminary colotomy in the Kraske operation. He also exhibited a carcinoma of the clitoris, one of the tongue, and one of the breast. In all operations for carcinoma he always made a clean sweep of the neighboring glands. In removing the tongue he did not approve of making counter-incisions in the cheek, but removed the organ through the mouth proper. In carcinoma of the breast he makes it a practice to go high up after the diseased glands, even up to the subclavian. The adjacent pectoral muscles should be cut away. If the disease is of the uterus, the neighboring lymphatic glands should be removed.

DR. R. H. HARTE has resorted to a more radical procedure in removing the breast for carcinoma; he makes it a practice to remove all the pectoral muscles.

DR. W. M. L. COPLIN being requested to speak on the subject, stated that the practice of removing the adjacent lymphatic glands, adopted by surgeons, is based on a good pathologic basis, since infection spreads through these tracts. Even removing part of the tumor for diagnosis is not good practice, since the site of the wound may cause inoculation of the surrounding healthy parts.

DR. J. B. DEAVER, in closing, said he was glad to hear the remarks of Dr. Coplin, especially in regard to the danger of removal of part of a tumor for microscopic diagnosis. In removing the breast he always removes a portion of the superficial tissue, rather than to try and have close primary apposition of the skin in closing the wound. A granulating wound with healthy tissue will not be so liable to lead to recurrence.

ECHINOCOCCUS CYST OF LIVER.

DR. HIRAM R. LOUX contributed a paper on resection of the liver for removal of one of three cysts. The patient was a man, 31 years of age, a German, whose family history was negative. The onset was two years ago, with pain in the hypochondriac region, and later a mass was found in this locality, freely movable and not tender. There was no discomfort. An incision revealed an echinococcus cyst attached by a pedicle to the left lobe of the liver. The attachment was removed by means of the Paquelin cautery, and at the same time a small portion of this organ was removed by the cautery heated to a dull red color. There was but slight hemorrhage. The tumor was pear-shaped and weighed 197 grams. There was a slight discharge of bile through the wound for about two weeks, but otherwise recovery was uneventful. In removing these tumors great care should be exercised to prevent the contained fluid from entering the abdominal cavity, lest a recurrence follow.

Toronto Clinical Society.

Feb. 7, 1900.

RADICAL CURE OF INGUINAL HERNIA.

DR. W. H. PEPLER presented a patient, 75 years old, who first came to him in the summer of 1898. Suddenly, while walking on the street, the man felt something give way in the right groin, and then noticed a swelling there. A right inguinal hernia was found and a suitable truss ordered, which could not be worn without much discomfort. A second and a third was tried with similar results, the hernia continuing to fall down and the man being miserable all the time. As he was anxious that something permanent should be done, an operation was decided on. With the assistance of Dr. Bingham, the canal was opened and the sac tied off and let back into the abdomen, the ring and canal being then closed with mattress sutures. On the night after the operation, the patient got out of bed in the absence of the nurse, went to the water-closet, had good motion of the bowels and returned to bed. In the morning it was found that the stitches had broken away, the case really developing into the open operation. The wound was packed with gauze down to the external ring and healed by granulation. The patient at the present time is in good condition, has no discomfort, and has no need to wear any truss. The operation was performed in May, 1899.

DR. E. E. KING stated that no truss should be worn after these operations. In a large number of cases where there is a considerable quantity of fat in the abdomen, you get better results by the open method. He spoke of a patient 73 years of age on whom he had done the double operation without any complications.

FRACTURE OF ANATOMIC NECK OF HUMERUS.

DR. E. E. KING presented this patient, a man about 50 years of age. About 3½ weeks ago, the man was in the upper part of a house, somewhat the worse for alcohol. As he got up to open the door he stretched out his hand to take hold of the latch, touched something unawares, missed his footing and fell, striking his arm about three or four inches below the shoulder-joint. There were no other bruises on the body anywhere. He got up and went back into the room and stayed there all that evening and night. The next day—he had used the arm all that time—he consulted a surgeon, who treated the injury as a severe sprain and had applications applied. Three days ago he came into the service of Dr. King, at St. Michael's Hospital. There was loss of motion to a considerable extent, atrophy, and the nerves were injured in the axilla.

Dr. King presented a skiagraph of the shoulder and described the conditions present. There were two fractures, one a fracture of the bone below the head internally, extending outward and then down the shaft of the bone a short distance, probably two inches—something like a green-stick fracture—and the upper end of this lower fragment could be felt in the axilla. Then there was a fracture of the anatomic neck, with what seemed to be a rotation of the head of the bone.

TREATMENT OF INEBRIETY.

DR. DUNSMORE, resident physician, Lakehurst Sanitarium, Oakville, Ont., read a paper with this title. His first object was to make it clear that this institution was conducted on strictly ethical principles, and that no so-called specifics or nostrums, or "gold-cures," constituted any portion of the treatment of these cases at the Lakehurst Sanitarium. He briefly touched on the effects of alcohol on the human system, and

then outlined their treatment. Oakville, situated as it is on the north shore of Lake Ontario, about twenty miles west of Toronto, gives a most delightful and healthful situation. Added to this tone of cheerfulness there is abundant amusement provided for the patients, both in winter and summer; and special emphasis is placed on the importance of moral tonics. The patient is put strictly on his honor as regards the taking of alcohol, and no restrictions whatever are placed on him. Withdrawal of the alcohol is the first essential, and the most trying part of the treatment is the first week or ten days of abstention. Then there is the absence of temptation in institution life, which is of special advantage. For sleeplessness, bromids or hyoscin are used; and quinin and strychnin sometimes, in tonic doses. In selected cases it has proved very beneficial to wash out the stomach. During the presence of collapse symptoms, the limbs are rubbed and hot applications made to the body; and tincture of capsicum in 5 minim doses given occasionally at this time has a good effect. The average case of chronic alcoholism can in this way be removed from his liquor in about a week. The institution claims about 75 per cent. of permanent cures.

PLACENTAL INSPECTION, ITS UNCERTAINTIES AND ITS DANGERS.

DR. J. F. W. ROSS read a paper with the above title. The object of the paper was to establish digital examination of the uterine cavity as routine practice in every case immediately after the delivery of the placenta, in order to have complete satisfaction that no pieces of placenta or membranes had been left therein. The fact that septicemia following delivery has not decreased even with the adoption of aseptic and antiseptic measures, that there are so many cases following the retention of fragments of placenta, even so late as the tenth or twelfth day; that the method is adopted and considered the proper procedure after a substantial rise of temperature; and that it is the proper recognized treatment following miscarriages, are good and sufficient reasons, he thinks, why digital examination of the uterine cavity following the delivery of every woman should be adopted as routine practice. In illustration, Dr. Ross cited many cases where, if this practice had been adopted, portions of placenta would not have been left in the uterus to form a breeding-ground or culture-medium for pyogenic organisms, and many lives would have been saved and much prestige retained by the practitioner. We should not wait until the appearance of fever and other symptoms before making this examination.

In the discussion which followed this paper, none of the practitioners present seemed disposed to go to this extent, although Dr. Ross stated that if he were in the active practice of obstetrics, he felt satisfied he would adopt this procedure.

Orleans Parish Medical Society.

New Orleans, La., Feb. 10, 1900.

PHLEBITIS COMPLICATING MASTOID DISEASE.

DR. O. JOACHIM reported two cases of mastoid disease complicated with phlebitis of the lateral sinus. In both patients the same treatment was applied in a general way—laying open of the mastoid cells and removal of the infected tissue in this region, exposure and excision of the sinus followed by copious irrigation, and finally ligation of the jugular vein low down in the neck, with incision above and irrigation. One of the patients succumbed to pyemia, autopsy showing multiple metastatic abscesses in both lungs. In the other recovery ensued.

The patient, who was exhibited by Dr. Joachim, presented unilateral facial palsy and paresis of the sixth nerve on both sides. The former came on after operation, notwithstanding the fact that nothing was observed during the operation which indicated traumatism of the facial nerve. The abducens trouble dated back to a short time before the operation.

DR. M. FEINGOLD, who had examined the eyes thoroughly and studied the case from the ophthalmologic standpoint, submitted a report in which he gave, as his conclusion with regard to the cause of the abducens paresis, pressure on that nerve by a thrombosed cavernous sinus in each side.

GONORRHEA IN THE MALE.

DR. CHAS. CHASSAIGNAC spoke on this subject. He dwelt particularly on the importance—from a medicolegal point of view—of differentiating between new infections—in men previously the subjects of this disease—and the recrudescence of an old infection following venereal or alcoholic excess, the more rapid appearance of the latter—often within twenty-four hours—being an important item in the differentiation. In regard to treatment, he referred to experiments made with methylene blue given internally, these without any degree of success. Liquor sodii chloratis, in the proportion of 1 to 48 and 1 to 24, was referred to as his favorite typical remedy.

DERMATITIS HERPETIFORMIS.

DR. J. N. ROUSSEL reported a case of dermatitis herpetiformis in a child, cured by circumcision. The disease appeared shortly after birth and disappeared in a few days, only to reappear at the end of the first year. It then remained until circumcision was performed at the age of 3 years; the eruption then left the skin after the lapse of ten days.

Pasadena Medical Association.

Pasadena, Cal., January and February Meetings.

RECOVERY FOLLOWING ESCAPE OF CEREBROSPINAL FLUID.

DR. GEO. S. HULL reported this condition in a woman of middle age, who was thrown violently from a buggy, her forehead striking the curb. After the shock she vomited blackened blood quite frequently. There followed pain in the head, dizziness, some conjunctival ecchymosis and loss of the sense of smell. While on her back she was continuously swallowing some fluid which trickled down the post-nasal space. After sitting up, the fluid escaped from the left nostril and at the end of the third week averaged about a pint and a half a day; an analysis showed it to be the cerebrospinal fluid. The flow gradually diminished and ceased by the close of the fourth week. The patient made a perfect recovery, except that the sense of smell did not return.

DR. J. H. MCBRIDE said that the case was interesting though not unusual. He called attention to cases of spontaneous loss of cerebrospinal fluid recently reported by Dr. St. Clair Thompson, of London. The latter's own patient was a young woman who began to have dripping of cerebrospinal fluid from the left nostril in 1892, the discharge recurring at intervals until 1895, when it was continuous for a year. Headaches, which she had suffered from since childhood, ceased when the flow came on, and returned when it stopped. The amount of flow was fifteen ounces in twenty-four hours. Tillaux published a case in 1877, of spontaneous loss of the fluid in a man who afterward died in convulsions, and Wallace Mackenzie published one of a boy of 7 years, who had loss of cerebrospinal fluid from the nose. Scheppegrell reported a somewhat similar one in the *Am. Jour. of the Med. Sci.*, for February, 1898. Thompson collected the histories of twenty-one cases in which there was certainly loss of this fluid from the nose, and twelve in which it is probable that the discharge was cerebrospinal fluid. Nine of these suffered from brain symptoms of some kind, either headache, giddiness, somnolence, paralysis, convulsions or coma. The flow commences gradually. The fluid comes away in drops and in most cases amounts to a pint in twenty-four hours. It usually escapes from one nostril, though it may come from both. It is clear, free from odor and taste and is sterile, faintly alkaline and has a sp. gr. of 1005 and 1010. It contains a substance which gives a sugar reaction, but which is not sugar. The proteid substance which it contains is not albumin but globulin.

Dr. McBride referred to a case published by Dr. Elliotson, in the *London Med. Gaz.* in 1875, and republished by Thompson. A woman had spontaneous loss of cerebrospinal fluid from the nose which continued for eighteen months, ceased, and then returned fourteen years later. It finally stopped under treatment.

An autopsy in one case showed an opening in the dura over the ethmoid, through which fluid probably escaped. In a case reported in Dr. Thompson's series, there was discharge from the ear, the discharge being irregular and preceded by a whistling sound. The loss of a large quantity of cerebrospinal fluid does not seem to affect the health unfavorably.

DR. CHARLES RUSSELL BARDEEN, associate in anatomy in the Johns Hopkins Medical School, has been called to the chair of anatomy in the medical department of the University of California.

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THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION.
61 MARKET STREET, - CHICAGO.

SATURDAY, FEBRUARY 24, 1900.

NEWER CONCEPTION OF THE CRANIAL NERVES.

Nothing illustrates the marvelous advances in neurology more than some recent studies on the nature and development of the cranial nerves. Heretofore anatomy and physiology have been content to assign to these nerves certain arbitrary numbers, and to give up all hope of ever accounting for their peculiar courses and complex constituents. So long as the nerve trunks alone were studied, our knowledge remained at a standstill. When they were examined from the standpoint of the embryologists and evolutionists, a flood of light began to pour in and to illuminate their intricate nature. It was then discovered that a true knowledge of the evolution of the cranial nerves was only to be found in a minute examination, embryologically and phylogenetically, of their peripheral and central terminations. Only from the closest observation of the changes wrought in their nuclei by the processes of adaptation and natural selection, and the comparing of these changes with the corresponding alterations in the muscular and sensory organs of the head, could anything like an adequate conception of how these nerves have been evolved from ancestral types be obtained. Studies along this line seem to have fairly established certain fundamental facts directly opposing the teachings of the older anatomists and physiologists.

It was formerly affirmed that the cranial nerves were merely modifications of spinal nerves, while it is now believed that they are older than the spinal, and that the latter are modifications of the cranial type. It was also formerly taught that the optic and olfactory nerves were nerves in the same sense that the vagus and trigeminus are, and hence they were classified along with all the cranial nerves. Now it is recognized that the so-called first and second nerves are really brain tracts and are to be more correctly classified with the intracerebral ganglia and tracts. The third cranial nerve is the first of the true nerves. Again, formerly it was said that cranial nerves were single nerves possessing motor or sensory fibers or both; but why they were so was not explained. It is now quite obvious that the components of these nerves are as easily accounted for as are those of the spinal. They have their segmental representations just as much as the nerves that spring from the cord. In some of the cranial nerves, as for instance the oculomotorius, there is a fusion of many nerves, shown by the multiple character of its nucleus. In other cranial nerves there has been a suppression, and in still others a survival of primitive, segmental motor and sensory components.

Many examples might be adduced to illustrate the radical yet logical changes that we have had to make in our conception of the cerebrospinal nervous system. Two essays, however, have recently attracted our attention, and we commend them for careful study to any one who desires to comprehend these changes. The first appeared in the autumn of 1899, by W. H. Gaskell[1], and is entitled "On the Meaning of the Cranial Nerves." The other is by C. Judson Herrick[2], on "The Cranial and First Spinal Nerves of Menidia; a Contribution upon the Nerve Components of the Bony Fishes."

Of all parts of the body the head has undergone the most radical alterations, as a result of evolutionary development. The nervous apparatus of the head has been pre-eminently the subject of adaptive changes. Contrary to the old view, which held that the skull is a modification of the vertebræ at the end of the spinal column, it is probable that the head is the more ancient of the two, and that the spinal column and trunk are outgrowths, as it were, of the head. This probability is strengthened by the study of the relationship existing between the brain and the spinal marrow.

The first mass of differentiated nervous matter appearing in the animal world is the esophageal ring or brain encircling the anterior part of the alimentary canal. As this primitive ring-brain increased in size to meet the exigencies of a higher development, the alimentary canal was necessarily encroached upon. In scorpions, Pedipalpi, and spiders this has gone on so far that these creatures have been reduced for alimentation to the sucking of blood and other fluids. In the higher vertebrates, the old alimentary canal has been completely severed, leaving the infundibulum with its hypophyseal—pituitary—attachment as a relic. Thus the startling discovery is made that the ventricles of the brain, together with their extension in the central canal of the spinal cord, constitute the remains of our original alimentary tract. Many facts of physiology as well as of pathology go to confirm this hypothesis. The mammalian nervous system, therefore, consists of two parts, an outer one of pure nervous matter and an inner of epithelial structure. If this is so, the distinction between these two parts of the cerebrospinal nervous apparatus ought to become more and more pronounced, the farther we extend our observations down the scale of life by way of the reptiles, amphibians, etc. As a matter of fact, they do gradually become more and more distinct.

The pineal gland is, in all probability, the remnant of one of the earliest extensions of nerve processes upward from the esophageal ring and formed the primitive single eye on the top of the head of certain low creatures. Behind this esophageal ring, a series of deposits of nervous matter or ganglia was found occupying the respective segments of the creature's segmented body. From these segmental deposits, nerve processes extended laterally to innervate the surface for sensa-

[1] Brain, 1899. [2] Archiv. of Neur. and Psychopath, ii, 1, 2.

tion, the musculature for motion and the branchial and visceral attachments and appendages for special purposes. In the spinal cord these branchial or visceral components have been more or less suppressed and are represented in the sympathetic, leaving only motor and sensory roots for the spinal nerves. The modifications and adaptations of these branchial components largely cause the complexity of the cranial nerves. Nevertheless, the segmental origin of these nerves and their components can be still clearly traced. "The evidence of ammocœtes is conclusive that the seventh nerve belongs to the branchial system, i. e., to the group of the vagus nerve and not to the trigeminal group." (Gaskell.) The motor part of the trigeminal nerve is not a single one, but the fusion of a series of nerves belonging to six or seven segments, a fact which explains its long descending root and nucleus. According to Küpffer, the trigeminal nerve in ammocœtes is formed by the amalgamation of at least five segmental nerves. The third nerve is clearly a compound one, as shown by the multiple segmental character of its nucleus, each subdivision of which, lying in rotation along the aqueduct of Sylvius, has had its localized function already determined.

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In the words of Gaskell, "The cranial segmental nerves represent the original types of segmental nerves and are all derived from the corresponding segmental nerves of the arthropod. The spinal type is a more recent type and like the spinal cord is a vertebrate characteristic." The assignment of the motor, sensory and visceral components of the cranial nerves to their respective segments, the explanation of the disappearance of some of their primitive components and of the amalgamation of others, together with the separation of the highly intricate nervous apparatus of the head into its individual progenitors forms a most fascinating study in biology, and has already added to medical neurology. It is so large a subject that we can not do more than indicate it here.

PATHOLOGY OF THE CEREBRAL VESSELS. ESPECIALLY IN RELATION TO MENTAL DISEASES.

While the pathology of insanity in general is still in its infancy, yet the importance of vascular lesions of various kinds is fully recognized. These lesions may affect brain tissue in two ways: the supply of blood may be diminished or shut off and the return flow of lymph delayed. The retardation of the lymph current may result in mechanical injury to the nerve-cells, which are also exposed to the deleterious action of waste products in the lymph. Surely the bathing of nerve-cells in lymph laden with effete materials must be highly detrimental to normal function and structure. As pointed out by Berkeley in his recent article on the general pathology of mental diseases[1], one of the most frequent causes of the retardation of the return of lymph lies in the proliferative changes in the adventitia whereby the perivascular spaces become filled with cells. The milky-gelatinous thickenings so common in the pia mater of the insane are characteristic of disturbance of the vascular lymph system.

In addition to the acute degenerative and other vascular lesions that result from acute toxemias and bacteriemias, arteriosclerosis deserves prominent mention in connection with the pathology of mental diseases. It is interesting to note that arteriosclerosis develops at an early age in a large number of the insane and of persons with hereditary tendency to insanity. In such cases we are forced to fall back on the assumption that the quality of arterial tissue—"vital rubber"—which the individual inherited is bad. Berkeley has noted the presence of arteriosclerosis in imbeciles at the age of 12 years. Whatever the exact relation of arteriosclerosis of the cerebral vessels to insanity may be, it is plainly evident that, once established, its harmful effects on the tissue of the brain must be far-reaching and beyond the possibility of successful relief.

Inflammatory processes in the walls of the cerebral arteries, caused by syphilis, are looked on generally as of pre-eminent importance, especially in the pathogenesis of tabes and of general paresis. Berkeley points out that the ordinary symptoms of general paresis may be accounted for by a progressive alteration of the walls of the cerebral vessels whereby the supply of nutrient fluid is reduced at the same time as the channels for the return flow of lymph are narrowed. It is always interesting to follow discussions of the characteristics of luetic vascular lesions. Berkeley observes that microscopically at least three different processes are found in syphilis of the brain. In the first place there is the endarteritis obliterans that Heubner described as the characteristic form of vascular syphilis. It is now agreed that while the endarteritis obliterans of Heubner is often the result of syphilis, yet it is not as definitely peculiar to lues as the gummatous arteritis, described by Baumgartner, which usually begins in the adventitia and secondarily involves the middle and inner coats; foci of round cells develop, undergo central necrosis and become surrounded by newly formed fibrous tissue. Berkeley and Greco have found this form of arterial disease in a goodly number of cases of paretic dementia of syphilitic origin. From the adventitia the proliferation may extend into the surrounding tissue, occluding the perivascular lymph spaces and inducing cellular degenerations of various kinds. As indicated, this form is more characteristic of syphilis than any other, arising primarily in the smaller arteries, and not being secondary to disease in the tissue. Obliterating endarteritis, on the other hand, may be secondary also to degenerations of nervous tracts and to any inflammation of a chronic character. Another form of arterial disease in chronic syphilis is a fibrous and hyaline degeneration of the media without much involvement of either intima or adventitia; the resulting thickening may greatly reduce the lumen of the affected vessel, secondary throm-

[1] American Journal of Insanity, 1900, lvi, 457.

bosis often leading to complete closure. This lesion occurs not only in the larger meningeal vessels, but also in those in the medullary tissue.

In acute toxemias disintegration and degeneration of the capillary walls may result, with increased permeability of the vessels; some fibrous thickening of the capillaries also is noticeable in sclerosis of the larger vessels, and congestions render the capillaries dilated, tortuous, etc. The veins partake in a number of the changes observed in arteries; especially noticeable is a tendency to cell proliferation in the adventitia and the venous sheaths.

Accumulations in the perivascular spaces of cells, detritus, pigment granules, and hyaline material are of common occurrence in various insanities, especially of the degenerative type.

Many mental disorders often present symptoms as precise and as characteristic as those present in physical disease, and it might be expected that such definite clinical pictures would correspond with definite changes in the cerebral nerve-cells. So far this has not been found to be the case, and as yet the vascular and perivascular changes of mental diseases are much more definite and comprehensible.

REGULATION OF MARRIAGE.

An attempt is being made to have a law enacted in Colorado restricting marriages, such as has been proposed in one or two other communities. Like the other propositions, this one includes the appointment of boards of medical examiners who shall determine the applicants' freedom from hereditary and infectious disease, and their general moral and physical fitness for the marriage relation and its consequences. Marriage or cohabitation in violation of the act is to be an offense punishable by not less than four nor more than seven years in the penitentiary. The idea of human stirpiculture, to use a word coined by the lawbreakers af the Oneida Community, seems to be fascinating, but there are some objections. In the first place such a law to be enforced must be general, and that is not likely to be the case. Even less rigid enactments regulating marriage are practically dead letters, like the law forbidding the marriages of first cousins in some states, which is evaded by simply crossing a state line. When such a comprehensive one as that proposed in Colorado is attempted, wherever it may be, it is safe to say that serious difficulties will arise in its enforcement.

CARE IN SIGNING CERTIFICATES.

A little care now and then will save a doctor some embarrassing mistakes. Not very long ago the newspapers contained the story of a physician who, from carelessness in affixing his signature on birth certificates, nearly ruined his reputation by giving himself as parent of those he had assisted into the world. He simply wrote his name in the wrong place on a few forms, and obtained for himself a regular Mormon reputation. Another doctor carelessly certified the cause of death on a certificate as "old age," giving the age of the patient as the duration of the disease—81 years. The certificate therefore declared the man born old and suffering all his life from senility which finally carried him off. Such little errors are comparatively unimportant, and easily corrected as a rule, but they may make one who commits them temporarily uncomfortable. As in signing petitions, men too often put their names down without attention to the documents they sign. A newspaper advertisement of one's oversights and errors, harmless though they may be, is not considered desirable by most people, and a physician derives no special advantage from serving as a source of public amusement.

MEDICAL PRACTICE IN OHIO.

The medical practice act now before the Ohio legislature deserves the full support of every physician in the state. It has, we understand, been modified so as not to affect students already matriculated, so that opposition from that source has been withdrawn, but the osteopaths are clamoring for recognition and may imperil the passage of the bill in its integrity. It is the duty, therefore, of every respectable physician to use what influence he can exert for the passage of the act and prevent the statutes of Ohio being disgraced by recognition of arrant quackery and putting it on the same legal plane as legitimate medicine. The average lay legislator is open to suggestions and should be guided in medical law-making by the advice of his medical friends. Nearly every one must have his family physician, and it is not likely that many of them have installed an osteopath in this position. Nevertheless, it is possible that through the passiveness of those who ought to act, these quacks may carry the day, an event which will be an impossibility if the medical profession throughout the state does its duty. It is not a matter for congratulation that the students made their point, but the harm done is only temporary and we can, we trust, leave it to the standard and integrity of the medical faculties to see that no unworthy or unqualified person passes the college examinations during the four years of the Ohio medical students' exemption from the state examinations. In this connection, it may be said that THE JOURNAL was a little premature in announcing the somewhat similar success of the South Carolina medical students. Their bill passed the lower house but failed in the Senate, and the law yet stands unaltered. It is a pleasure, under the circumstances, to make the correction.

BONE CHANGES IN INFANTILE SCURVY (BARLOW'S DISEASE).

The real nature of the changes underlying the abnormal conditions of the osseous system in infantile scurvy has not been fully cleared up. In a comparatively rare disease like this considerable time must needs pass by before enough material of a suitable character can accumulate so that the pathologic anatomy can be studied in the various stages of its evolution. In a case of infantile scurvy recently studied post-mortem, by Jacobsthal,[1] the gross examination showed: suggillations of the skin; small hemorrhages in the pleura, pericardium, lungs, muscles, periosteum, joints and bone marrow,

[1] Ziegler's Beitrage, 1900, xxvii, 172.

cranial, periosteal, endosteal, and perichondral osteophytes; epiphysiolysis in the femurs and the left tibia; atrophy of muscles and bones. The most striking feature is the marked hemorrhagic diathesis giving rise to the characteristic subperiosteal hemorrhages. As a result of the hemorrhagic tendency, the cause of which is as yet unknown, hemorrhages occur especially in those parts that during the period of growth are in a condition of physiologic congestion and proliferation, such as the internal layer of the peritoneum—the cambium—the epiphyseal regions, and in a less degree the bone marrow. As a further direct or indirect result of the hemorrhages, Jacobsthal finds that the old bone tissue undergoes atrophy; this may be due to the nutritive disturbances produced, or perchance to some kind of virus; in places, especially at the epiphyses, the bone may disappear wholly, on account of the increased resorption and the diminished growth. Simultaneously hemorrhages in the osteoplastic tissue of the periosteum lead to a productive inflammation, and a tissue, rich in spindle-shaped cells and containing but few and irregular bone trabeculæ, develops; similar changes, but less marked, may occur in the interior of the bones. There is marked disturbance of the endochondral ossification; the cartilage cells are stimulated to an increased and atypical proliferation, but new tissue does not penetrate into the cartilage and replace it with bone. In this way an abnormal fragility is produced at the osteochondral junctions, the cartilage and the new inflammatory tissue with irregular bone trabeculæ meeting more or less sharply. Hence the ease with which separation of the epiphyses occurs.

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TUBERCULOSIS STATISTICS.

The State of Rhode Island, like the State of Massachusetts, keeps up an accurate system of vital statistics. The latest issued report of its Board of Health—1897—contains among other valuable data, some interesting facts as to tuberculosis, the one disease that is just now the chief subject of attention to physicians and sanitarians. It shows that calculating by five-year periods from 1866 to 1895, inclusive, the death-rate from this disease has diminished from 17.66 of the total (1866-71) to 10.41 (1891-95). The five years not yet fully elapsed will, it is hoped, reduce the ratio still further, though the possible recrudesence of influenza may temporarily increase it. The showing is not quite equal to that of New Hampshire, recently noticed in THE JOURNAL, but is encouraging and the more so as regards this disease as the total death-rate in the state has not correspondingly decreased. It would thus appear that consumption is becoming less fatal of late years, and this can not be attributed altogether to the recent agitation of the subject, as the decrease here, as elsewhere, has been progressive for many years. The Board of Health has also made investigations bearing on the communicability or contagion of consumption. In a total of 6672 deaths occurring in the years 1890 to 1897, inclusive, there were 2 deaths in the same family in 155 instances, 3 in 20 instances, and in 1 family, 4 deaths. In 242 cases, more than 1 death occurred in the same house, 229 of these in Providence. There were 3 in 29 instances, 10 of them of the same families. In 2 instances there were 4 deaths, in 1 of these all of the same family. Where there were only 2 deaths in the same house the victims were of the same family in 96, in the others the names at least were different. State and other public institutions are not included. These figures are interesting and suggestive, but so far as they go they do not indicate any very excessive influence of family tendency or of house infection.

PSORIASIS AND GLYCOSURIA.

Furunculosis, pruritus, and prurigo are far from uncommon in the course of diabetes, and they must be considered as results of the metabolic and excretory disturbances that constitute an essential part of the fundamental disorder. So far as is known, these cutaneous affections do not in their turn have any influence in the causation of diabetes. It has, however, been maintained that diabetes occurs more frequently in those suffering from psoriasis than in others, although it is admitted that the cutaneous lesion is not particularly common among diabetics. To the small number of cases in which this association was present, Nagelschmidt[1] adds that of a woman, 32 years old, whose mother had had psoriasis, who herself presented psoriasis that had been present since early life, and in whom symptoms of diabetes had been recognized for five years, death taking place in coma. To determine whether a greater predisposition to glycosuria is present in cases of psoriasis than in others, Nagelschmidt administered, in the morning when the stomach was empty, to 25 patients suffering from this cutaneous disorder, 100 grams of anhydrous glucose, dissolved in a pint of water, the urine being examined immediately before, and three or four times at intervals of an hour afterward, all other food and liquid being for the time withheld. Trommer's, Nylander's, the fermentation-test and the polarization-test were employed, and sugar was considered present only when all yielded a positive reaction. Among these 25 patients it was found that alimentary glycosuria developed in 8. In 1, however, chronic lead-poisoning was present, in another obesity, and in a third spastic spinal paralysis, and although these conditions are not likely to have been in any way responsible for the appearance of sugar in the urine, their elimination will still leave 5 among 25 of psoriasis in whom alimentary glycosuria was present —20 per cent. Such a relation was not, on investigation, found to exist between alimentary glycosuria and other diseases of the skin, such as furunculosis, pruritus, eczema, prurigo, dermatitis herpetiformis. It would thus seem to be demonstrated that an unusually marked predisposition to alimentary glycosuria exists in persons suffering from psoriasis, and while this must for the present be looked upon as suggestive rather than conclusive, the precautions that it indicates should not be ignored.

PROTECTIVE INOCULATIONS FOR TYPHOID FEVER.

Numerous efforts have been made to obtain a serum capable of conferring immunity to typhoid fever and of exerting a curative influence on the developed disease, but hitherto without satisfactory evidence of success. Inasmuch as the disease is one of which an attack confers relative protection from subsequent attacks, it does

not seem unreasonable to hope that we shall eventually come into possession of an effective antitoxin. Although the lower animals are not susceptible to typhoid fever as commonly observed in human beings, there develops in them a form of septicemia, to which, however, immunity can be induced by the use of heated cultures of typhoid bacilli or of the filtrate from unheated virulent cultures, or of cultures in thymus-bouillon. Some attempts made by A. E. Wright, professor of pathology in the Army Medical School at Netley, England, in conjunction with successive associates, to produce these results in human beings, would seem to have attained a measurable degree of success, and they are particularly interesting at this time from their bearing on the vaccination by the same method of recruits for the British Army in South Africa. In the latest communication on this subject, Wright and Leishman[1] describe the method for obtaining the vaccin and the results of its employment, in so far as these can at present be estimated. The inoculations were made on troops in India, the vaccin being largely prepared as required. This consisted in part of a four-weeks-old culture of virulent typhoid bacilli, with 1 per cent. of lysol, sterilized by exposure to a temperature of 60 C., or of a twenty-four-hour-old culture, the dose of the former employed for each inoculation being from .5 to .75, and of the latter from .3 to .5 c.c.—the minimal fatal dose for 100 grams of guinea-pig; 2835 men were inoculated. Among these there occurred 27 cases of typhoid fever (.95 per cent.) with five deaths (.2 per cent.), as compared with 213 cases (2.5 per cent.) and 23 deaths (.34 per cent.) among 8460 uninoculated persons. These results become the more conspicuous from the fact that the inoculated included principally young and unseasoned men, while the uninoculated included older and more seasoned ones. While perhaps these observations can not be looked on as conconclusive, they indicate at least the harmlessness of the procedure employed, and they justify the hope that we shall soon have a means of diminishing the prevalence of, as well as reducing the mortality from, typhoid fever, just as these things have been done for smallpox, for hydrophobia and for diphtheria.

TREATMENT OF SYPHILIS BY INHALATIONS OF MERCURIAL VAPOR.

In the treatment of syphilis it is sometimes desirable to bring the system speedily under the influence of mercury. This might be accomplished by means of subcutaneous injections, but for a number of reasons this method has not come into general employ. As large doses of mercury administered by the mouth are generally not well borne, and as absorption from the gastro-intestinal tract is relatively slow, this route will not be employed when speedy physiologic results are acquired. The introduction of mercury through the skin by sublimation has never been popular, and is at present but little if at all employed. Inunction, however, appears to be one of the most efficacious and trustworthy, as well as simple and practicable modes of administering mercury. Kutner[2] expresses the opinion that when this is applied to the skin it is not absorbed, as it has been shown that it is not present in the deeper layers, even after thorough rubbing, and he suggests that the effects produced are due to inhalation of the vapor of the metal. In support of this view he points out that the therapeutic results are obtained also when mercurial ointment is simply applied to the body, and not rubbed in, or when preparations of mercury are kept near or upon the body. Governed by these considerations, Kutner has patients placed in a closed chamber, in which, by means of an apparatus that they can control themselves, mercury is rubbed on different parts thereof and the vapor evolved inhaled. Heat can, if necessary, be employed, additionally, to increase the vaporization. Kutner suggests, further, that generating the vapor by the application of heat directly to metallic mercury may be better, but the danger of intoxication would have to be carefully guarded against, and the amount of mercurial vapor that can be inhaled with safety determined. Experimental observations have shown that by this means sufficient mercury can be introduced into the body within a reasonably short time to effect therapeutic results. It was found that after a few inhalations of half an hour daily sufficient mercury was taken up to be appreciable in the urine. The actual therapeutic application of the method has proved satisfactory, the mouth being rinsed with a solution of potassium chlorate after each inhalation, in order to prevent the development of stomatitis.

[1] British Med. Jour., Jan. 20, 1900, p. 122; THE JOURNAL, February 17, p. 419; this issue, p. 450.

[2] Berliner Klin. Woch., 1900, No. 2, p. 34.

NON-GONORRHEAL URETHRITIS.

There would seem to be no obvious reason why inflammation of the urethral mucous membrane should be exclusively dependent on the invasion and pernicious activity of gonococci. Lesions of other mucous membranes are not so restricted in etiology, and it may be reasonably believed that the urethra shares in this susceptibility to the action of a multiplicity of irritants. Existing evidence, however, as to the occurrence of a non-gonorrheal urethritis, while not deficient in amount, lacks somewhat in the precision necessary for scientific demonstration. The difficulties to be overcome consist in the exclusion of gonorrheal infection, recent or remote, of syphilis, of tuberculosis, of chancroid, of herpes and of other irritative conditions of the urethra. On the assumption that urethritis may arise independently of gonorrhea, the following classification has been suggested—1. Urethritis due to internal causes: *a*, constitutional disease; *b*, ingested substances. 2. That due to external causes; *a*, traumatism; *b*, venery. It is also held that such urethritis may be due to bacteria or be aseptic. Barlow has made a critical and analytical study of the subject, the results of which he details in the Festschrift number of the *Deutsches Archiv für klinische Medicin*, B. lxvi, p. 1441, dedicated to Prof. H. v. Ziemssen in celebration of the seventieth anniversary of his birth. Only a small number of cases were found in the literature in which urethritis was attributed to constitutional influences, such as typhoid fever, rheumatism, lead-poisoning, parotiditis, and microscopic examination of the urethral discharge was made. Such a complication might be anticipated in cases of typhoid fever, for instance, in which it has been definitely determined that typhoid bacilli are often present in the urine and some-

times in large number. In the cases reported, however, the evidence was not conclusive that gonorrhea had not previously existed. The same criticism may be made with regard to the urethritis that is said to occur not rarely after the ingestion of beer and articles of food known to give rise to urticaria. Non-gonorrheal traumatic urethritis has been reported in the sequence of catheterization, urethral injections, the presence of foreign bodies in the urethra and bicycle riding. Two groups of cases of non-gonorrheal urethritis of venereal origin have been described, in one of which bacteria other than gonococci have been found, while in the other no bacteria whatever could be discovered. Of the former, but a single case is recorded in which the bacteria found were demonstrated, by inoculation experiment, to be the cause of the urethral inflammation. In the others absolute evidence was wanting that the condition was not the sequel of a previous gonorrhea. To the few cases of non-gonorrheal urethritis in which bacteria could not be found Barlow adds another, and on the basis of this observation and an analysis of the literature he concludes that the recognition of this variety of urethral inflammation is justified, although strangely, he expresses the opinion that the disease is contagious. With the first part of this conclusion there will be general agreement, but with our modern conceptions of the nature of disease, its etiologic factors, and its mode of transmission, it is difficult to understand how a contagious disease can be other than dependent on a living virus, although this may, for a time, elude discovery.

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PLUMBIC PARALYSIS.

When the paralysis due to lead poisoning was first described systematically, it was thought that the small muscles of the hands escaped. The wasting of the thenar eminence observed in painters was attributed to the pressure exerted in the use of the brush, although subsequently this was correctly ascribed to the toxic effects of lead. In this process the adductor of the thumb and the first interosseous muscle are also involved. It has been held that this paralysis constitutes part of the so-called forearm type, including paralysis of the extensors of the hand and the fingers, with escape of the supinators. An upper-arm type has also been described, with involvement of the supinators, the biceps, and the brachialis internus; and finally a third variety, with paralysis of the small muscles of the hand, the thenar and hypothenar eminences and the interossei. The last, it has been thought, may be the earliest manifestation of lead palsy, the extensors of the forearm being affected later and more slowly; at other times, the paralysis of the small muscles of the hands may be superadded to that of the extensors. Paralysis of the small muscles of the hands has been observed with relative frequency in file-cutters, and the condition has been attributed in part to the toxic effects of lead, and in part to the over-use to which the affected muscles are exposed. That the latter factor is assuredly not the sole and perhaps not the more important etiologic influence would seem to be indicated by two cases reported by Bernhardt[1], occurring in painters in whom, in conjunction with other symptoms of lead poisoning, there was found in one paralysis of the adductor of the thumb and the first interosseous muscle of the right hand, and in the other paralysis of the interossei of the right hand.

[1] Berliner Klin. Woch., No. 2, 1900, p. 26.

THE ETIOLOGY OF NEURASTHENIA.

Although neurasthenia is known as a modern disorder, and is sometimes designated the "American disease," it is probable that it has existed throughout all time. Its most characteristic phenomenon is undue readiness of recuperation, and of this its protean symptomatology represents but innumerable variations. It is customary to speak of the disorder as a "functional" one, from a failure to discover definite anatomic or histologic changes capable of explaining its manifestations, but it is difficult to conceive of derangement of function without alteration in structure, although this may elude the action of stain and the scrutiny of microscope. One is therefore constrained to believe that certain insidious and elusive nutritive, chemic or toxic influences are operated in the etiology of neurasthenia. What is perhaps scarcely less important, however, is the susceptibility, the predisposition of the individual nervous system to the specific influences responsible for the development of the disorder. Here analogy may be made with the infectious diseases, by which, as is well known, all exposed are not attacked, in consequence of inherent peculiarities included in the term "insanity." So, too, with regard to neurasthenia, the system may or may not be receptive or susceptible to the particular stimuli capable of bringing about its development. Some clinicians have attempted to make a distinction between primary and secondary neurasthenia, but this can not well be sustained. The etiologic factors may be single or simple, or multiple and complex, and the contributing influences may be numerous and varied. The ultimate exciting factor may be only the last of a long train of causative agencies. Some of these are discussed in an interesting communication by Höflmayr.[1] The importance of hereditary predisposition must be acknowledged. Emotional disturbances and excessive mental and physical activity, as well as traumatism and digestive disturbances, are of subordinate significance, else neurasthenia would be even far more common than it is, and it would at times appear in epidemic distribution when large bodies of men are exposed to some one or more of these conditions; as, for instance, in times of war, in competitive examinations, other contests, and the like. Besides, these influences are only temporary and their effects should disappear with their removal. Höflmayr concludes, therefore, that neurasthenia is induced and maintained by injurious agencies of varied kinds arising within the body and capable of renewing their activity constantly. These agencies he considers as chemic or toxic and the process as one of autointoxication. The extraneous influences give rise to disturbances in metabolic balance, resulting in impaired nutrition and in deficient muscular activity and gaseous interchange. To these may be added deprivation of sunlight and inadequate attention to the skin. According as these conditions are but temporary or are maintained, the symptoms of neurasthenia will disappear or persist.

[1] Deutsche Archiv f. Klin. Med., vol. lxvii. p. 492.

Medical News.

THE POST hospital at Fort Keogh, Mont., was almost totally destroyed by fire February 15. It was built in 1878.

A NEW feature is to be introduced into the French department of public instruction, a permanent bureau of information of all kinds in regard to universities, colleges and schools in other countries, with a collection of all the important foreign official or private publications on educational subjects.

THE COURT of appeals (Manger vs. State Ex. Board of Md.) has decided that a physician is not debarred by the mere want of a diploma from the right to be registered in Maryland, as a practitioner of medicine, and that the Board is compelled to issue a permit authorizing registration under such circumstances.

FROM THE *Gazette Méd. de Paris* we learn that the Belgian ambulance sent to the assistance of the English wounded has been captured, also the Russian, German, Spanish and Hollandish ones. Dr. Caldwell has been condemned by General Erasmus to four years with hard labor for his attempt to desert and join the enemy.

IN ARKANSAS, the Garland County Medical Examining Board has inaugurated a crusade against all illegal practitioners and "sharks," who have infested Hot Springs for many years. The movement is supported by a large majority of licensed practitioners. Counsel has been employed, and contested cases will be carried to the supreme court if necessary.

A CHILD 4 months old, died in Plymouth, Ind., February 9, from some unknown ailment. After three days had elapsed the Board of Health called to investigate and the parents, who were believers in faith cure, protested against interference and made answer that the child was sleeping. The Board then took forcible possession of the body and buried it.

IF THE initial number of the *Doctors' Magazine*, a new venture in medical journalism, edited by Dr. Geo. F. Butler, Chicago—which made its appearance February 15—is a fair sample of what is to follow, success is assured in the undertaking. While it is not supposed to be a strictly scientific medical journal, for the reason that it contains much outside matter, still, all of it is of interest to doctors only. The writers for the first number are all well-known local men, while the foreign correspondence and the miscellaneous matter, of world-wide interest, make the magazine one that ought to be a welcome visitor to the home of every physician.

PURE FOOD AND DRUGS.—Senator Stokes of New Jersey will present a pure food and drug bill before the legislature of that state, which it is hoped will have a deterring effect on the practice of adulterating these products. The bill in part annuls the power of the present state dairy commissioner, and places greater responsibility in the hands of the State Board of Health. The object of the bill is to prohibit the sale of any drug which does not come up to the requirements as recognized by the United States Pharmacopeia. Milk must not contain more than 88 per cent.—normal—of water, while other food products must not be colored with substances of an inferior quality.

PROPOSED MARYLAND LEGISLATION.—The medical practitioner's bill, now before the House of Delegates, of Maryland, and backed by the profession there, has the following clause: "Any person shall be regarded as practicing medicine, within the meaning of this act, who shall attempt to heal, operate on or prescribe for any ailment of another." The "Christian Scientists" of Baltimore, who claim two churches in that city, with 500 members, are vigorously fighting this and propose an amendment as follows: "Provided, however, that nothing contained in this act shall apply to any person or persons who minister to or treat the sick or afflicted by mental or spiritual means, and without the use of any drugs or manipulation."

SUIT FOR PRENATAL INJURIES.—Some months ago THE JOURNAL mentioned a suit for prenatal injuries brought against St. Luke's Hospital, Chicago. Shortly before the child's birth the mother had her left leg crushed in an elevator accident, while being transferred from one floor of the hospital to another. When her child was born his left foot, left side, and left leg were paralyzed and deformed. The mother settled with the hospital authorities on her own account, and then brought suit for the child. The supreme court holds that at the time of the accident the child could not be considered as a separate being capable of sustaining an action independent of the mother. "If an action can be maintained," it says, "it necessarily follows that an infant may maintain an action against its own mother for prenatal injuries." Justice Boggs files a dissenting opinion and holds that the child was a separate being. The best evidence of this fact, he says, is that the child was born alive after the injury to the mother.

NEW TUBERCULOSIS JOURNAL.—A new journal devoted to the discussion of tuberculosis and its treatment is announced in Germany. It will be called the *Zeitschrift für Tuberculose und Heilstättenwesen* (Journal of Tuberculosis and Sanatoria), and will be under the editorial control of Dr. C. Gerhardt, B. Fraenkel, and E. von Leyden, with the co-operation of a number of prominent European and American physicians, including Drs. Bacelli of Rome, Broadbent of London, Bouchard of Paris, Knopf of New York City, and others. Original articles will be accepted and published in German, French and English, and it is intended to give a complete survey on the works on tuberculosis throughout the world. For the present the *Zeitschrift* will appear irregularly, in numbers containing 80-90 pages. The price of one volume of six numbers will be 20 marks. The publisher is to be Johann Ambrosius Barth, Leipzig. Communications in regard to contributions, etc., should be sent to Dr. Alfred Moeller, Belzig, near Berlin.

PROPOSED HOSPITAL FOR CONSUMPTIVES IN OHIO.—A bill has been introduced in the Ohio legislature, to establish a state hospital for consumptives. It is to be organized and conducted on the general plan of the other benevolent institutions of the state, so far as applicable. The controlling body is to be a board of five trustees appointed by the governor, who shall select the superintendent and other officers. The superintendent must be a well-educated physician, a graduate of a reputable medical college, and of not less than six years' experience in the actual practice of his profession. Besides the resident medical staff, the trustees are empowered to appoint examining physicians not to exceed fifteen in number, each to be a graduate of a reputable medical college and of not less than five years' of practical experience, and skilled in the diagnosis and treatment of pulmonary and tubercular disease. They shall be citizens of Ohio and located at such points in the state, not more than one in any community, as will best serve the purpose of their offices. Their fees

or compensation are to be regulated by the trustees. Admission to the hospital will be through the officers in charge of the poor and by the certificate of the medical examiners. If able to pay, the rates will be fixed by the trustees, but no extra privileges are allowed, and preference is to be given to the poor. An appropriation of $200,000 is included in the bill.

LABORATORY FOR STUDY OF THE PLAGUE.—According to the *Medical Press and Circular*, the St. Petersburg Institute of Experimental Medicine has just completed the construction of a laboratory for the study of plague and preparation of antiplague serum, which, in the way of precautions against the escape of infectious organisms, is in advance of anything else yet devised. It is situated on an island, in the fortified town of Cronstadt, and access is possible only by a small steam launch. It contains quarters for horses and other animals for serum cultures and experiments by the laboratory staff, and even a small hospital ward for isolation and treatment in case any of the staff or employees fall victims to their scientific zeal. The unfortunate experience at Vienna undoubtedly suggested these precautions, which so far have not been elsewhere considered quite necessary, or at least have not been so thoroughly carried out. They probably include a disinfecting chamber through which everything that goes out must pass, and it would be difficult to suggest much more, except, as the *Press* says, condemning the staff to perpetual banishment on this island. Speaking seriously, however, there is much to commend in this care for the public health that these measures imply, and it is possible that they are more necessary in Russia than they might be in some other regions.

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NEW YORK.

THE BILL to prohibit the sale of drugs in department stores met with some acrimonious discussion in the Assembly, but was finally advanced to a third reading by a vote of 65 to 40.

THERE has been born in Brooklyn a girl baby weighing only 2½ pounds, whose wrist measures only 1⅞ inches in circumference, and foot 1⅝ inches in length.

STATE CARE OF DRUG HABITUES.

A bill, fathered by the Church Temperance Society of the Protestant Episcopal Church, is to be offered in the Assembly at Albany, with a view to securing the establishment of a state institution for the treatment of persons of both sexes who are addicted to the use of spirits or drugs. It provides for the appointment of a board of managers by the governor, and the erection of an institution having accommodations for 300 inmates. Commitments will be secured for five years, and a parole system similar to the one in use in the Elmira Reformatory is a part of the scheme. Incurable cases will not be received. The cost of maintenance is to be charged against the counties from which the commitments come.

New York City.

ERYSIPELAS FOLLOWING HYPODERMIC.

A woman who was recovering from her confinement recently received a hypodermic injection for some reason. The next day the arm, about the site of the injection, began to swell rapidly, and soon it was evident that erysipelas had attacked the part. The disease spread rapidly, and before many days had elapsed it became necessary to amputate the arm. Owing to her poor general condition at the time, her life is in danger.

CANCER STATISTICS.

At a meeting of the New York Academy of Medicine held February 15, Drs. Roswell Park and Gaylor presented a report, illustrated by lantern slides, of the researches in regard to the etiology of cancer, made during the past year at the state laboratory at Buffalo. The results, as detailed, pointed, it is claimed, toward the parasitic nature of the disease.

SOUTH AFRICAN HOSPITAL CORPS.

This corps, recently organized in Chicago, as noted in last week's JOURNAL, and which is to operate under the asupices of the American Red Cross Society, sailed for Havre en route to Pretoria, on the steamer *Gascoigne*, February 15. It will be stationed within the Boer lines, but expected to afford aid, as opportunity is given, to both sides alike. Before sailing the corps was presented with a Red Cross banner by Miss Clara Barton, and an American flag by the town of Holyoke, Mass. The corps consists of six surgeons and fifty-one assistants and hospital attendants.

PENNSYLVANIA.

MEMBERS of the State Medical Council met in Harrisburg, February 13, to consider the report of the chairman in regard to the question of fraud practiced recently before the State Board of Medical Examiners. The meeting was held behind closed doors.

THE CITY council, Chester, has instructed the mayor to enter suit against the Chester Water Company for supplying impure water to the inhabitants of that place. By this means it is hoped to compel the water company to introduce a system of filtration.

THE POLICE of Germantown recently found smallpox prevalent in five members of one household. The family emigrated from an infected locality about four months ago. The patients have been removed to the hospital and disinfection of the premises instituted.

Philadelphia.

DR. E. E. MONTGOMERY has been spending a few days in Chicago during the past week.

DR. J. MADISON TAYLOR delivered the address before the graduating class of the Pottsville Hospital Nurses' Training School, recently.

THE PHILADELPHIA Alumni Society of the medical department of the University of Pensylvania gave an informal "smoker" the 17th.

AT THE last annual meeting of the contributors of the Methodist Episcopal Hospital, an address was delivered by Dr. James Hendrie Lloyd.

THE FRESHMAN class of the Medico-Chirurgical College recently gave a "smoker" in honor of the sophomores of that institution.

AN EXCELLENT portrait of the late Dr. William Pepper, by G. W. Pettit, is now on exhibition at the City Hall. A committee has been appointed, and it will probably be purchased and hung in this building.

UNIVERSITY OF PENNSYLVANIA MEDICAL CLASS OF '75.

The executive committee of the Society of Alumni has appointed Dr. Chas. Dulles, 4101 Walnut Street, to endeavor to secure a reunion of the class of '75 at the June commencement. Members of the class are requested to send him their present addresses and some brief account of their doings since graduation. There will be a social gathering to celebrate the twenty-fifth anniversary.

DANGERS OF TUBERCULOSIS.

Dr. William H. Crane, a member of Common Council, has addressed a letter to members of Select Council, calling their attention to the dangers of tuberculosis, and the importance of exercising preventive measures in its spread, by prohibiting expectoration in public places, and also the importance of providing receptacles on the streets containing antiseptic fluids.

TYPHOID FEVER STATISTICS.

The recent heavy rains are manifest in the color of the Schuylkill River, which is filled with mud and fine particles of coal from the coal regions above the city, and the mortality from typhoid has already begun to increase. On January 20 there were 35 cases of this disease and 8 deaths; January 27, 44 and 8 deaths; February 3, 39 and 6 deaths; February 10, 56 and 6 deaths; February 17, 76 and 14 deaths.

PHILADELPHIA ALMSHOUSE.

During the year the expenditures of this institution were $497,996.17; there remains on hand $2609. The number of children now under charge is 10,973; 7005 left the hospital during the year. The number of admissions was 8043, with a mortality of 13 per cent.; 607 were admitted to the department for the insane.

MORTALITY STATISTICS.

The number of deaths occurring in the city for the past week was 503, a decrease of 27 over the previous week and of 34

over the corresponding period of last year. The principal causes were: apoplexy, 2; nephritis, 34; cancer, 14; tuberculosis, 50; diabetes, 2; heart disease, 4; influenza, 3; peritonitis, 10; pneumonia, 83; locomotor ataxia, 4; suicide, 1.

FUMIGATION OF BAGGAGE.

The utility of one of the provisions of the United States health laws was demonstrated here a few days ago when the Red Star Line steamship *Switzerland* arrived from Antwerp with 238 steerage passengers, not one of whom had more than one suit of clothing, and who had not complied with the laws in regard to the fumigation of baggage at the port from which they sailed. The consular certificate as to the fumigation of the baggage in Antwerp could not be produced, and so every trunk, package, etc., was ordered removed to the quarantine station to be thoroughly fumigated. All the passengers will be detained at the Reedy Island Quarantine Station until all danger of infection has passed.

OHIO.

SANITARY LEGISLATION IN OHIO.

Several measures are pending in the Ohio legislature, intended to improve sanitary conditions.

1. *The Municipal Code Bill.*—This is expected to take municipal matters out of the hands of politicians—incidentally it will remove the health officer from politics. Boards of Health are to be abolished. In cities—all municipalities of 3000 inhabitants or more are to be cities—the health officer is to be appointed on the merit system, after an examination by a state commission, or an examining body appointed by such commission. He can be removed from office for cause only, publicly shown. His successor would have to be appointed in the same manner. His salary is fixed by council. The health officer is empowered to make and enforce sanitary regulations. All other employees of the health department are to be appointed in the same manner. Provision is made for a fund to pension sanitary policemen after fifteen, or in some cases twenty-five, years of service. In villages—all municipalities under 3000 inhabitants—the health officer replaces the board of health, but he is appointed by the mayor, without competitive examination. His powers equal those of the city health officer. The State Board of Health has been strengthened as regards the required approval of all plans for water-works and sewerage systems. The people seem to be in favor of the bill. Many politicians and office-holders are not. It is to be doubted that it will be enacted into a law.

2. *Medical Practice Act.*—Another bill is one to amend the medical practice act, introduced by Dr. Love. In brief, it requires that all persons unauthorized to practice in Ohio under the provisions of the present act, and desiring to practice medicine in the state of Ohio, after July 1, 1900, shall possess certain defined literary qualifications, shall be graduates of reputable medical colleges, as determined by the Examining Board and shall in addition pass a satisfactory examination in the fundamental branches of medicine. A new definition is given of what shall constitute "the practice of medicine," which is a "shot" at the osteopaths and others of their ilk. The bill has raised a storm of opposition. The osteopaths are well organized, and they and their friends are flooding members of the legislature with protests against the bill. The medical students of Ohio, 2500 or more, have also combined against it. They demand that present matriculates shall be excepted from the provisions of the bill. There is a probability that this demand may have to be recognized. The profession does not seem to be well organized in support of the bill. Its fate is at least doubtful.

3. *Impure Ice.*—A bill introduced at the instigation of the State Board of Health seeks to diminish the dangers of using impure ice. The Board conducted an examination last year which revealed that much of our ice is taken from impure sources. This bill provides that no ice shall be cut for sale or use within the limits of any city or village without first obtaining a permit from the local Board of Health. The permit may be revoked for cause. The Board may also stop the sale or use of any ice, no matter where cut, if, in its opinion, the same would be detrimental to the public health. The bill is a close copy of the New Jersey law. Its chief merit is the permit feature, as it is much easier and more satisfactory to the ice men, to prevent the cutting of ice from improper sources than to confiscate and stop the sale of such ice after it is cut. No opposition to the bill has been heard of so far.

4. *Sanitary Barber Shops.*—Another bill, which it seems likely will be difficult to enforce, is one to guard against contagion from barber shops. It authorizes local boards of health to regulate their sanitary condition, and to provide for the disinfection of brushes, razors, etc., *each time they are used.*

Cincinnati.

AN ORDINANCE to appropriate $3000 for the maintenance of the Cincinnati Branch Hospital during the smallpox epidemic was introduced February 10.

BEQUESTS.

By the will of August Osterfeld the following hospitals will receive $100 each: Good Samaritan, St. Francis, St. Mary's, and St. Joseph's Maternity. St. Mary's Hospital receives an additional $100 by the will of Martha A. Burman.

Cleveland.

DEPARTMENT CHANGES.

As a result of alleged differences between the gas and food inspectors' departments, a reorganization of this branch of the municipal government is contemplated, which will create the office of city chemist and place that official in charge of all the laboratory work done by the city. The law department is investigating the matter, and an ordinance bearing on the subject will be submitted to the council.

MARYLAND.

Baltimore.

AT THE recent meeting of the Medical Society of the Woman's Medical College, a young white man in good health, with complete congenital transposition of the heart and other viscera, was exhibited.

DR. JOHN RUHRAH, quarantine physician, on the appointment of his successor next month, will sail for Europe to spend two years there in medical study. Dr. M. S. Rosenthal, assistant quarantine physician, will also go to Europe at the same time.

MEDICAL LEGISLATION.

The state senate has passed the following bills: To amend the charter of Baltimore so as to increase the number of vaccin physicians from twelve to twenty-four, and to increase the salaries from $300 to $900; to change the name of the second Hospital for the Insane of Maryland, at Sykesville, to "The Springfield State Hospital." (See also our News Columns.) A bill has also been introduced to carry out the recommendation made by the secretary of the Lunacy Commission, requiring not only that two physicians should certify the existence of insanity, but also make affidavit to this, and that their certificates should be further submitted to the approval of the court. Another relating to infectious diseases, is also before the legislature, forbidding teachers in any of the public schools in the state to admit any person who can not present a certificate, from a regular practicing physician, of successful vaccination, under penalty of $10 for each offense. Teachers are empowered to give orders for the vaccination of any unvaccinated child, and any physician so vaceinating shall receive 50 cents per capita.

CITY CHARITIES.

Dr. Mactier Warfield has been appointed one of the nine supervisors of city charities. This body, under the new city charter, has the spending of all the money appropriated by the city for public charities, amounting this year to $397,350. The system heretofore in vogue in this and other cities, to appropriate money directly to the hospitals and charitable institutions, is prohibited by the new charter. Hereafter the Board will make contracts with hospitals and charitable institutions, so much per capita.

BEQUEST.

The late Miss Eloise Baker left $1600 to the library of the Maryland Medical and Chirurgical Faculty. It is probable that this amount may be laid aside as the nucleus of an endowment fund. She was the daughter of Prof. Samuel Baker, of the University of Maryland, on whose motion a resolution was adopted at the annual meeting in 1830, "that $500 be appropriated for the purchase of books to be kept in a suitable place, under the direction of a committee, for the use of the members." Some time ago she gave to the Faculty an oil portrait of her father, and fitted up a "Baker memorial room."

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CHARLES FREDERICK WIESENTHAL.

This physician, the father of the medical profession of Baltimore, Md., born in Prussia in 1726, physician there to Frederick the Great, settled in Baltimore in 1755. He was a member of the committee of observation and superintendent of the manufacture of saltpeter for the troops in 1775, and surgeon-major of Smallwood's battalion in 1776. He was surgeon-general of Maryland in 1777, and died June 1, 1789. An old portrait of him was shown, together with his crest and a photograph of his medical school, which is still standing, at a recent meeting of the Johns Hopkins Historical Club, by Dr. E. F. Cordell. Extracts were given from his letters to his son, while the latter was a medical student in Philadelphia in 1781 and in London 1787-89. He taught most of the medical students in Baltimore in his day, and was the first physician in "Baltimore Town" to drive a four-wheeled vehicle. He established there the first Lutheran church (1762), the first German society (1784) and the first medical society (1788).

ENDOWMENT OF JOHNS HOPKINS MEDICAL SCHOOL.

The statement recently made in a medical journal, with regard to the endowment fund of American medical colleges, was incorrect in the rating given the Johns Hopkins Medical School. We are informed that the true amount is $500,000. The hospital was opened in May, 1889, but the funds of the University were deemed insufficient to inaugurate the medical school to be established in connection with it in accordance with the provisions of the will of Mr. Johns Hopkins. During 1890 the collection of a fund of $100,000 was begun by the women throughout the country, in order to secure in the future school equal privileges to the sexes. By Oct. 28, 1890, $111,300 was raised, and the Board of Trustees resolved to open the school when the fund for its establishment and maintenance should amount to not less than $500,000. Besides the $111,300 the trustees had at this time $67,480 available, the greater part being the principal and interest of the Boxley bequest. On Dec. 22, 1892, it was announced that Miss Mary E. Garrett, of Baltimore, had made additions completing the $500,000 endowment. The school was accordingly opened Oct. 2, 1893, with fifteen teachers, thirteen men and three women students. April 16, 1894, ground was broken for the first group of buildings of the medical school, which was called "The Woman's Fund Memorial Buildings," the first structure in America exclusively for anatomic purposes. A second building—physiologic and pharmacologic laboratory—was opened in 1898. Other buildings will follow. The terms of endowment gifts were that not more than $50,000 of the amount should be used in buildings. The faculty are partly paid out of this fund and partly out of the separate hospital endowment fund.

CANADA.

DR. R. W. BELL, Peterboro, has been appointed assistant physician at the Toronto Asylum for Insane, his appointment to take effect in March.

THE MAYOR of Montreal, in his inaugural address, promised the citizens that efforts would be immediately made to give that city a purer milk-supply.

AT ITS recent meeting the Provincial Board of Health approved of the Ontario Government voting, at its present session, a grant to the vaccin farm at Palmerston, Ont.

WINNIPEG has recently erected a new maternity hospital. It is in charge of the Sisters of Mercy. A notable feature of the building is the large sun-galleries on each flat.

DR. C. B. KEENAN, of the Royal Victoria Hospital, Montreal, has been appointed one of the surgeons to the "Strathcona Horse," which the present Canadian High Commissioner in England is sending to South Africa at his own expense.

OWING to the unsanitary condition of many of the factories and workshops in Ontario, the Provincial Board of Health will advise the government for better inspection in regard to ventilation, etc.

DEATHS from diphtheria are on the decrease in Ontario. During 1899 there were only 263 deaths from this disease against 632 in 1898, and 930 in 1897. Dr. Bryce thinks that the better sanitation of the province and the general use of antitoxin have resulted in the decrease.

RED CROSS work is being briskly prosecuted in Montreal. Large quantities of hospital supplies and comforts for the wounded are continually going out to South Africa. During last week something like seventeen hundred hospital pads and cushions alone were made in the Victoria Rifles' Armory, by the women of that city.

CONSIDERABLE dissatisfaction is expressed in military medical quarters that the Dominion Government refused the services of a leading surgeon of Toronto, who volunteered for South Africa. There seems to be an undercurrent of opinion that the selections in this respect have not been of the happiest character.

ONTARIO'S HEALTH FOR JANUARY.

Up to the present date 90 per cent. of the population has reported. There has been a decrease in all deaths from contagious diseases, compared with a year ago, except for diphtheria. The total deaths in January were 1743, against 2154 in January, 1899. Scarlatina registered 12; diphtheria, 51; measles, 3; whooping-cough, 4; typhoid, 16; and tuberculosis, 179.

LIQUOR BY PRESCRIPTION.

The druggists of the Province of Quebec are seeking legislation removing certain restrictions on the sale of liquors on physicians' prescriptions. It is held that it is an especial hardship on poor people to be refused liquor at the drug shops unless they present a doctor's certificate that it is for medicinal purposes. They can not afford to pay for the prescription and the liquor as well.

CONVALESCENTS' HOSPITAL.

Situated on the banks of the St. Lawrence, at Verdun, Que., is the Robert Jones Convalescent Hospital, which is doing especially good work by caring for sick children during convalescence either after sickness in their own homes or in the city hospitals of Quebec Province. The institution also opens its doors to delicate children requiring change of air and diet during the summer months.

SMALLPOX OUTBREAK.

The smallpox outbreak at West Toronto Junction, noted in these columns last week, is now well under control, thirteen cases being the total reported to date. The disease has spread to Toronto, but so far only two cases have been reported. The City Board of Health has asked the health officer to choose a site for a new smallpox hospital. Regarding general vaccination, which is proceeding in the schools of the city, the homeopaths are seeking to have their system of internal vaccination adopted.

AMENDING THE MEDICAL ACT IN QUEBEC.

A bill has been introduced into the Quebec legislature, which if passed will certainly be of marked advantage to many students of medicine in that province, although it may not be considered a just or proper measure. From the leader of the opposition in the House it is meeting with decided opposition. Ordinarily, the law in Quebec, as in the Province of Ontario, requires a student, before entering on his professional duties, to pass the matriculation examination required by the College of Physicians and Surgeons, and so become registered before entering on those studies. It has been pointed out by Dr. Cotton, in his speech before the Assembly, that there was much misunderstanding in regard to the proper time to register, many students having proceeded with their professional studies in perfect faith without having passed a matriculation examination. Apparently the bill is to do away with the necessity of passing this examination at all, but provides that before being admitted to practice in the province they shall pass the prescribed examination—the final one alone—of the College of Physicians and Surgeons. The College of Physicians has not voiced its opinion one way or another on the merits of the bill.

HEALTH OF DAWSON CITY.

Public and private sanitation in the spring of 1899 has effected a marked improvement in the health of Dawson City. Prior to that there had been much dysentery and typhoid with some malaria, but now conditions are changed for the better. A fever somewhat resembling mountain fever has been seen in the district, but so far as known there have been no fatalities noted from this. True malaria occurs at intervals during the summer time, and its presence seems to aggravate an attack of typhoid fever. Typhoid mortality seems to have been about 5 per cent. of all the cases. Pneumonia is rarely met with. Scurvy is dying out; and diphtheria, measles, smallpox and scarlet fever are reported to not as yet have visited the district. It is stated that the risks to health and life are now no greater

than they are in any other portion of Canada. Another authority states that there is less sickness in Dawson City at the present time in proportion to the population than in any other part of Canada. So far, the country is very free from syphilis; a bimonthly examination of all prostitutes is insisted on by the authorities there.

THE LAURENTIAN SANATORIUM.

A sanatorium for the treatment of cases of tuberculosis has just been inaugurated in the Province of Quebec. It is situated about one mile from Ste. Agathe des Monts and about an equal distance from a station on a branch line of the Canadian Pacific Railway. Ste. Agathe is sixty-four miles from Montreal and is largely built up with the summer residences of wealthy Montreal citizens. The institution is about midway on the declivity of a hill, at an elevation of 1550 feet above sea-level. The soil is very porous; the drainage thorough. The sanatorium is supplied with pure, wholesome spring water, which is carried to each flat and supplies bath and toilet-rooms—both hot and cold. Electricity lights the building throughout; moist air heats it. Of the surrounding hills, it has a commanding view; there balsams grow profusely. The indoor staff consists of a house physician, Dr. Eust. Meli, a European graduate, who has had a most thorough training in the treatment of tuberculosis; a matron, herself a trained nurse, and two other trained nurses. Many of the prominent physicians of Montreal are on the medical board. As president of the British Medical Association, in 1897, Dr. T. G. Roddick, M.P., took occasion to say a few words about the advantages of the Laurentians as a location for such a sanatorium. They have been called the Adirondacks of Canada, having many of the features, physical and climatic, of that celebrated plateau, their average elevation being about 1500 and 1800 feet respectively. The immense pine forests, together with the moderate temperature, constitute the chief characteristics of the Canadian district from a medical point of view.

VERDUN INSANE HOSPITAL, QUEBEC.

The governors of this institution held their annual meeting this week. There have been more admissions during the past year than during any previous one. In 1899, there were 147 patients admitted, as compared with 110 during 1898. On the other hand, the receipts have fallen short of the expenditure, there being something like a deficit of $3000. Then a debt of $18,000 was incurred during the past year for necessary improvements. This institution was inaugurated ten years ago with 115 patients, and at the present time 362 are under treatment. The discharge rate during those ten years amounted to 53 per cent., most of them being cures. Dr. Burgess, the newly-appointed medical superintendent, thinks the government should supply more medical assistance. He also insisted on the importance of early hospital treatment in cases of brain trouble, instancing that of the 49 patients discharged cured, 26 had been insane less than two months prior to reception, and 43 of the 49—over 87 per cent.—had been insane less than a year. During the past year, besides the admissions mentioned above, the report shows that the total number treated was 471, or an average daily population of 343.45; of this number 80 were discharged, 49 recovered, 26 improved, and 5 unimproved. The discharge is thus 52.42 per cent., and the recovery rate 33.38 per cent. on the admissions. There were 33 deaths, or 7 per cent. of the total number under treatment, during the year; of these 14 were over 60, one 88 years old. The per capita cost of maintenance for the year was $186.79.

ILLINOIS.

Chicago.

DURING the past week 8493 pupils were examined by the school inspectors, and 371 were excluded.

DR. ARTHUR R. EDWARDS, of this city, and Miss Susannah T. Harrison, of Muncie, Ind., were married in Rome, Italy, February 15.

THE TOTAL mortality during the past week was 504, a decrease of 27 over the preceding week and 100 less than the corresponding week of 1899. Pneumonia was the leading cause of death.

The first food bulletin, containing the laws relating to the adulteration of food, has been issued by the State Food Commission. It is not the intention of the commission to prohibit the manufacture or sale of any substitute or imitation goods not deleterious to health, but simply to demand that they be properly labeled and honestly sold. After July 1 all retailers will be held responsible for selling goods without such labels.

LOUISIANA.

New Orleans.

DR. JOHN B. ELLIOTT, JR., instructor in physical diagnosis, medical department, Tulane University of Louisiana, was married to Miss Noel Louise Forsyth, on February 8.

IN THE case of the French steamer *Carolina*, with coffee from Rio Janeiro, the State Board of Health will adopt the same stringent measures as with the *Willowdene*, from Santos, also infected with plague, as noted in these columns several weeks ago.

SMALLPOX is no longer as active as some weeks ago. Of the eleven students of the medical department of Tulane who were attacked, three died. The others have all been discharged—of the entire number but one had been recently vaccinated, escaping with an insignificant attack of varioloid.

MICHIGAN.

Detroit.

THE NEW Policlinic, Detroit, was formally opened February 14.

THE BIENNIAL convention of the Nu Sigma Nu, which has been in session at Ann Arbor, closed February 17 with a banquet, tendered by the Detroit members of the fraternity.

Correspondence.

Medical Education.

NEW YORK, Feb. 13, 1900.

To the Editor: The letter of Dr. Bayard Holmes, Chicago, which appeared in THE JOURNAL of February 3, discusses a recent editorial on Medical Education in a broad and reasonable manner, which indicates that the attention of physicians has been attracted, as much perhaps as the attention of professors, to the subject in hand at the Christmas meeting of the American Society of Naturalists, viz., "The position that universities should take in regard to investigation."

Dr. Holmes says that "it is a mistake to assume that any medical school proposes to put its students to the serious work of actual research," and yet some medical schools win their prestige from the facilities they offer to students for just such work. Concerning "research methods" of work the editor utters a word of warning. What holds true for naturalists does not necessarily hold true for the medical student. Upon this some of the eminent professors who met at New Haven were agreed. Professor Dwight, of Harvard, emphasized his opinion in these words: "It is for the beginner to learn all that is worth learning in his particular field first of all. It is not easy in these days to learn all that is worth learning even in a very restricted department. To start an investigation with this only half-learned is a direct injury to the student, whom it turns to premature specialization. It is both foolish and cruel to exact investigation as a part of the regular training of every student."

Some medical colleges hold that if a student learns a fact through a long process of deduction, he learns it better than from a simple statement. This Dr. Holmes seems to advocate; but the "research method" of practical instruction is apt to waste valuable time. True, the skilful professor illustrates his facts and theories by a series of experiments performed by himself to his pupils, with the idea of emphasizing the important points. But he is in danger just as soon as he lets the importance of the fact be lost in the interest or technique of the experiment itself. It is because the research method of work is so pleasing to students, and so much easier than getting up forcible, up-to-date lectures, that students and professors alike are tempted to indulge in it, under the flattering assumption of being advanced. With it there is the tendency to lose sight of what the editor calls the underlying principles of medicine; —and just here, it might be added that Dr. Holmes expatiates on this term "underlying principles," as though he meant "cast-

iron formulæ," and assumes that he presupposes a few dogmas along with homeopaths and osteopaths; but this may pass.

The point is that medicine is not an abstract science, but the application of all sciences to the laws of the body and mind. The successful physician does his investigating in the hospital wards. He takes side courses in sociologic problems, in heredity, in temperament, and in the art of adaptation. He is, in the finished product, a detective, a judge, a confessor, a teacher, a comforter as well as a healer of sick bodies. So the professors of anatomy and physiology, and materia medica, must remember that their students are not going to be anatomists, or physiologists, or pharmacologists, but physicians; and that these studies are but the tools with which they are to work. They want to get them, and keep them sharp; that is all.

S. E. JELLIFFE, M.D.

Kirke's Handbook of Physiology.

50 ALBEMARLE ST., LONDON, W., Feb. 8, 1900.

To the Editor: In 1896 I had to call attention to the fact that Messrs. Wm. Wood & Co. of New York were publishing an unauthorized edition of Kirke's well-known Manual of Physiology. I have recently obtained a copy of the 15th edition of their work, bearing date 1899, and having on the title page the names of Mr. Morrant Baker and Dr. Vincent Harris as editors.

The facts are as follows: Mr. Morrant Baker—who is now dead—and Dr. Vincent Harris gave up the editorship of the genuine work four years ago, and even before that time Messrs. Wood & Co. never had their permission to use their work or their names. Since 1895-6 Professor W. D. Halliburton has been sole editor of the Handbook: he has almost re-written the work from beginning to end, although Kirke's name has been retained.

One of the special features of our book is a series of colored illustrations of blood-corpuscles, blood-crystals, etc. These, together with many alterations and improvements, both in cuts and text, which have been introduced by Professor Halliburton, have been adopted by Messrs. Wood & Co. without any acknowledgement of the source whence they were derived, and in the teeth of a protest by Professor Halliburton and myself—who am the proprietor of the book.

Not only have Messrs. Wood & Co. "conveyed" a large amount of Professor Halliburton's original work, but they have also issued their book under the names of Mr. Morrant Baker and Dr. Vincent Harris, who have nothing to do with it.

I think it is but right that I should again call the attention of the American medical profession to this glaring and persistent case of literary piracy, for the present United States law gives me no other redress.

The only authorized and complete edition of Kirkes' Physiology sold in America is that published by Messrs. P. Blakiston's Son & Co., of Philadelphia, in conjunction with my firm.

I am, Sir, Yours faithfully,

JOHN MURRAY.

Typhoid Peculiarities Following Sunstroke.

POINT ARENA, CAL., Feb. 9, 1900.

To the Editor: During a general country practice of over twenty-three years, I have treated about two hundred and fifty patients with typhoid fever, and in three, all men in the prime of life, a decided peculiarity has been shown in the duration and character of the delirium. The usual symptoms and general characteristics in all, except the three to which I allude, were present, and there was no marked deviation from the symptoms we would expect to see in that disease. But in the three the delirium was extraordinarily prolonged, neither of them being free from that condition for a period less than three weeks, and two of them for about four weeks. A peculiar type of the delirium was that the patients were quite rational so long as they were being talked to, but would relapse into hallucinations and various manifestations of brain derangement when left alone. They would recognize faces of friends and old-time acquaintances, and voices and other sounds, as well apparently as if they were not sick. I met the first of the three in 1885, during an epidemic of fever. The oddity of the case attracted my attention especially, and I made careful inquiry into the past life of my patient. The only thing I could learn was that he had suffered a severe attack of sunstroke some years before, from which he did not fully recover for two months. On meeting the other two, one in 1891, and the other last November, I noticed the same peculiar symptoms, and on inquiry found that they too had suffered severely from sunstroke.

I desire to know whether insolation leaves any lesion of the brain that renders it susceptible to the typhoid toxin causing that peculiar type of delirium. It seems to me the subject is of sufficient interest to engage the thoughts of our neurologists, and justify investigation.

GEO. J. BROWN, M.D.

Students and Medical Practice.

CAMDEN, S. C., Feb. 14, 1900.

To the Editor.—In THE JOURNAL of February 10, you editorially mention that "The medical students of South Carolina have succeeded in obtaining legislation exempting them from the state examinations, . . ." The bill to exempt all graduates from the only medical college in the state did pass the house, but the senate was wiser and more conservative, and killed it. I think that the young gentlemen who pushed this matter were lacking in forethought and discretion. The object of the State Board's examination is to keep down quackery, and if one bar is taken down, there will be danger to the entire fence. One of the arguments against standing the examination was the necesary expense of the trip to the capitol city, where the Board meets, a matter of say $25. The time will come when these young gentlemen will be pleased that they went to this expense and trouble. They will some day appreciate the value of a board which must pass upon *all* applicants to practice medicine in the state.

There is no doubt that they who get their diplomas from the Medical College of the State of South Carolina will successfully pass this examination, but strangers to them might think that their zeal in the matter of legislation against the examinations means a lack of confidence in themselves or in the college. I understand that the faculty is as a body opposed this bill; so it seems that they have plenty of confidence, and justly so, in the high standard of the Medical College of the State of South Carolina.

JNO. W. CORBETT, M.D.

Books Received.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interests of our readers.

THE APISTOPHILON. A Nemesis of Faith. By Frank D. Bullard, A.M., M.D., 12mo. Cloth. Pp. 110. Price $1.50. Chicago. R. R. Donnelley & Sons Co. 1899.

THE RETROSPECT OF MEDICINE. A Half-yearly Journal, Containing a Retrospective View of Every Discovery and Practical Improvement in the Medical Sciences. Edited by James Braithwaite, M.D., and others. Vol. 120. July-December, 1899. 8vo. Cloth. Pp. 442. Price 6/6. London: Simpkins, Marshall, Hamilton, Kent & Co., Ltd. 1900.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS AND PHARMACOLOGY. By George Frank Butler, Ph.G., M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons. Third Edition. Thoroughly Revised. 8vo. Cloth. Pp. 874. Price $4.00. Philadelphia: W. B. Saunders. 1899. W. T. Keener & Co., Chicago Agents.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF GYNECOLOGY. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. New (2d) Edition. In one octavo volume. Pp. 717. With 453 engravings, of which 47 are in colors and 8 colored plates. Cloth, $5.00, net. Leather, $6.00, net. Philadelphia: Lea Brothers & Co. 1899.

A MANUAL OF MODERN GASTRIC METHODS, CHEMICAL PHYSICAL AND THERAPEUTIC. By A. Lockhart Gillespie, M.D., F.R.C.P.E., F.R.S.E. With a Chapter on the Mechanical Methods Used in Young Children. By John Thompson, M.D., F.R.C.P.E. 8vo. Cloth. Pp. 176. New York: William Wood & Co. 1899.

DIET AND FOOD. Considered in Relation to Strength and Power of Endurance, Training and Athletics. By Alexander Haig, M.A., M.D., Oxon., F.R.C.P. Second Edition. Illustrated. Small 8vo. Cloth. Pp. 102. Price, $1. Philadelphia: P. Blakiston's Sons & Co. 1900.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. For the use of Students and Practitioners. By James Nevins Hyde, A.M., M.D., Professor of Dermatology and Venereal Diseases in Rush Medical College, Chicago. New (5th) Edition. One octavo volume of 866 pages, with 111 engravings and 24 full-page plates, 8 of which are colored. Cloth, $4.50, net; leather, $5.50, net. Philadelphia: Lea Bros. & Co. 1900.

THE INTERNATIONAL MEDICAL ANNUAL SYNOPTICAL INDEX TO REMEDIES AND DISEASES. For the Twelve Years, 1887 to 1899. 8vo. Cloth. Pp. 412. Price, $2.75. New York and Chicago: E. B. Treat & Co. 1899.

PRACTICAL TEXT-BOOK OF MIDWIFERY. For Nurses and Students. By Robert Jardine, M.D., Edin.; M.R.C.S., Eng.; F.F.P & S., Glasg. Illustrated, 8vo. Cloth. Pp. 246. Price, $1.50. New York: The Macmillan Co. 1899.

MENTAL AFFECTIONS. An Introduction to the Study of Insanity. By John MacPherson, M.D., F.R.C.P.E. 8vo. Cloth. Pp. 380. Price, $4. London and New York: Macmillan & Co., Ltd. 1899

CHRISTIAN SCIENCE. An Exposition of Mrs. Eddy's Wonderful Discovery, Including Its Legal Aspects; a Plea for Children and Other Helpless Sick. By William R. Purrington. 8vo. Cloth. Pp. 194. Price, $1. New York: E. B. Treat & Co. 1900.

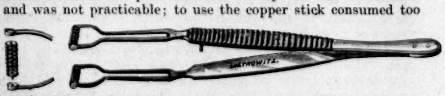
THE PRINCIPLES AND PRACTICE OF MODERN SURGERY. For the use of Students and Practitioners of Medicine and Surgery. By John B. Roberts, M.D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic; Mütter Lecturer on Surgical Pathology of the College of Physicians of Philadelphia. New (2d) and revised edition. In one octavo volume of 838 pages, with 474 engravings and 8 plates in colors and monochrome. Cloth, $4.25, net; leather, $5.25, net. Philadelphia: Lea Brothers & Co. 1899.

New Instruments.

A New Forceps for the Treatment of Trachoma and Granular Conjunctivitis.

BY A. A. CANNADAY, M.D.
ROANOKE, VA.

As the treatment of trachoma is mostly surgical, i. e., expression, grattage, and brossage, I wish to describe a surgical method, which, in my hands, has been entirely satisfactory. For years I have used the method of expression, but not with satisfaction in all cases. It is hard to get all of the granules out by squeezing; and furthermore the damage done to the mucous membrane is considerable. I naturally sought after a better method. To pick them out one by one was too tedious and was not practicable; to use the copper stick consumed too



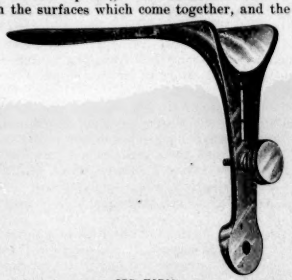
much time and was not an up-to-date procedure. Finally I secured just what I had been looking for. I had Mr. E. B. Meyrowitz, of New York, make me a pair of roller forceps—exactly like Knapp's, with the exception that one of the fluted rollers is replaced by a sharp-toothed roller, the teeth being about 1 mm. long and moderately sharp. They are very easily operated. All that is necessary is to pass the sharp roller over the granules, thereby making little punctures in the mucous membrane, then reverse the rollers and press the trachomatous material out. The sharp roller will not cut the outside of the lids. The lids are first disinfected, then cocainized and, after the operation, a solution of bichlorid 1/750 is rubbed in the mucous membrane thoroughly. I very rarely use general anesthesia and have never had any severe reaction following the operation. In the treatment of granular lids I made use of the same method, with the exception that I do not do it so thoroughly and find it uniformly successful. It is very necessary that this sharp roller should roll, otherwise it will slit in place of puncture the mucous membrane, and if it does there will be considerable destruction to that delicate membrane.

My associate, Dr. J. R. Garrett, has in course of preparation an article which will contain the report of quite a number of cases treated by this method, and will go into the matter more thoroughly. If this little article shall be the means of calling the attention of the profession to this instrument, I shall have accomplished my purpose.

Improved Graves' Speculum.

BY E. F. FISH, M.D.
MILWAUKEE, WIS.

I desire to call the attention of the profession to an improvement I have added to the Graves speculum, which is made of two blades held together by two handles and a set-screw. There is a slot in the upper and outer handle so as to allow it to be moved up or down on the set-screw, and thus adjust the size of the vulvar opening. The handles of these blades are smooth on the surfaces which come together, and the set-screw



OLD FORM.

is supposed to be tightened so that they can not slip. There is a lever on the upper blade. When the speculum is placed in the vagina and the lever is pressed so as to separate the distal ends of the blades to expose the cervix, the handles will slide on each other unless the vulva is large and lax. This will happen when the least force is required, in spite of the set-screw.

IMPROVED FORM.

Recently I had a ratchet put on the outside of the under handle of a Graves speculum, and a cross tooth on the back side of the outer handle. This tooth fits in any of the grooves of the ratchet. The vulvar end can thus be fixed and adjusted with a couple of turns of the set-screw, which any child has the strength to turn tight enough. I think this is a great improvement in the instrument, and renders it of some value to those who use it. For reasons I can not explain this has always been a very popular speculum and with this addition it ought to be still more so.

IMPROVED SPECULUM.—G. Zepler's improved slit speculum, is made of transparent glass and has several lengthwise slits which facilitate the introduction of sounds into the uterus, etc., according to *Cbl. f. Gyn.*, 39.

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Deaths and Obituaries.

DR. A. S. OLIVER, Kingston, Ont., died on February 15. He was one of the oldest physicians of that city, and was for many years a professor of the Royal Military College. He was 60 years of age, a graduate of Queen's University Medical College, Kingston, being for over twenty years a member of the Faculty of the College. He saw service in the Civil War, under the United States Government, for which he received a pension.

GUSTAVE MOZART STOECKEL, M.D., a son of Gustave Stoeckel, emeritus professor of music at Yale, died at his home in Norfolk, Conn., February 15, aged 51 years. After graduating from Yale he took his medical degree from the College of Physicians and Surgeons, N. Y., in 1874. Subsequently he also took degrees from the University of Vienna and the University of Paris.

WOOLSEY HARRIS, M.D., College of Physicians and Surgeons, N. Y., 1890, an assistant-surgeon of the Manhattan Eye and Ear Hospital, died in New York City from pneumonia, February 15. He was born in Alexandria, Va., thirty-two years ago, and at the time of his death, besides belonging to several medical societies, was a member of the St. Nicholas and New York Athletic clubs.

GEORGE W. COX, M.D., of the biologic department of Parke, Davis & Co.'s pharmaceutic laboratory, died in Detroit, Mich., February 11, suddenly, of neuralgia of the heart. He was 52 years of age and a graduate of the Medical College of Indiana, class of 1880. He was a member of the AMERICAN MEDICAL ASSOCIATION, a regular attendant at the annual sessions, and frequently contributed to THE JOURNAL.

A. J. BILLINGS, M.D., Freedom, Mo., died February 6, aged 74 years. He was a graduate of the Albany (N. Y.) Medical College, class of 1854, and one of the early members of the Maine Medical Association. During the Civil War he served as surgeon in the 19th Maine Infantry. In 1862 and 1868 he was representative from his district in the state legislature, and later served two terms as state senator.

JOHN C. ROTH, M.D., died in Baltimore, Md., on the 7th inst., aged 35. He was born and educated in Baltimore, graduated from the Maryland College of Pharmacy in 1884, and from the Baltimore University of Medicine in 1891.

THOMAS D. THRUSH, M.D., Kansas City, Mo., a graduate of the Kansas City Medical College, aged 38 years, died February 11. He was house surgeon to the City Hospital, and held the chair of surgery in the Medico-Chirurgical College.

HORACE R. ALLEN, M.D., formerly of Indianapolis, Ind., died in Chicago, February 13. He was born in Ohio in 1832. During the Civil War he served as surgeon in the 123d Illinois Regiment.

DR. G. H. CORBETT, the oldest physician of Orillia, Ont., died in the office of a brother practitioner on January 31. He was graduated from Queen's University, Kingston, in 1856.

We also note the following deaths:

David Crowell, M.D., Savannah, Ohio, February 7, aged 52 years.

D. C. Greene, M.D., Florence, Ala., February 13, aged 65 years.

R. A. Kennedy, M.D., Shamokin, Pa., February 6, aged [illegible] years.

G. J. McMurray, M.D., Philadelphia, February 10, aged 30 years.

J. S. O'Brien, M.D., St. Louis, Mo., a graduate of the Beaumont Medical College, class of 1897.

Jos. H. Pierce, M.D., Ivanhoe, Va., February 8, aged 58 years.

O. C. Heise, M.D., Nebraska City, Neb., February 9.

Charles Kennedy, M.D., Altoona, Pa., February 11.

DEATHS ABROAD.

Dr. Kostanecki, of the Cracow Institute of Bacteriology, died recently under circumstances that suggested laboratory plague poisoning. Every precaution was taken to prevent the spread of infection and the family were taken to the hospital and isolated, but it was finally determined that his death was due to a streptococcus infection.

Dr. G. Tourdes, honorary dean of the faculty at Nancy, recently died, in his ninety-first year.

Miscellany.

Transmission of Infection by Infection.—Nuttall reports tests (*Cbl. f. Bakt.*, xxxiii, 15) which show that when bedbugs and fleas bite, by their sucking, they remove any micro-organisms that may be introduced by their bite. But infection may occur if the insects are crushed on the skin and the bitten spot scratched.

Evolution of Sexual Instinct.—Féré's new work, with this title, proclaims that the evolution of the sexual instinct leads to chastity; one questions whether it is the crown of evolution for woman. History, he adds, shows that it is harder for man than for woman, but the progress of evolution is hindered by denying the biologic and social advantages of chastity, and by attributing to it inconveniences which do not belong to it. "Sentiment runs no more risk than the organs in chastity."

Shall We Charge for Medical Advice by Telephone?—An editorial in the *Cleveland Medical Gazette* answers this question by saying that whoever takes the physician's time and attention should pay for them. It adds that whenever advice or a prescription by telephone obviates the necessity of a visit or office consultation, it should be charged for. Otherwise the doctor's time and his gray matter are drawn upon without compensation, and he is further drained by having to pay for the very apparatus that is used to extract them from him.

To Arrest Hemorrhage of the Liver.—Tricomi reports the results of experiments on dogs to determine the best method of arresting hemorrhage in operations on the liver. In large resections, plugging with gauze occasionally proved insufficient, but for all other wounds it arrested the hemorrhage completely (*Il Policlinico*, Sept. 15, 1899). Ligature of the vessel efficiently supplemented the gauze plugging, or digital compression of the hilus as a temporary expedient. He found the results better when the resection was done in two separate stages. The tissues heal with only a slight depression after removal of the plug, in case of mere wounds.

John Locke as Physician and Philosopher.—Dr. William Osler threw a new light on the career of the English philosopher, at a recent meeting of the Johns Hopkins Historical Club, Baltimore, Md. By researches made last summer, among the manuscript writings of Locke preserved in the British Museum, he showed that Locke had not only studied medicine—although he never received a degree—but had also practiced it, leaving a considerable mass of writings on his cases. His notes of cases were most accurate and full, indeed models. The case of the Earl of Shaftesbury, who suffered from a hydatid tumor of the liver, was one of the most remarkable. The tumor was opened with the actual cautery after twelve years, and a silver tube introduced and worn ever after. There was a continual discharge of hydatids—not then recognized as such—to the number of several hundred. Another remarkable case was one of a titled English lady whom Locke treated for tic-douloureux and cured in Paris. Locke also treated the son of Sydenham, for measles, and described a case of angina pectoris. The intimate relationship between Locke and Sydenham was one of the most interesting points brought out in the paper. Sydenham wrote badly in both English and Latin, and Locke was of inestimable service to him with his fine scholarship, not only editing but even himself writing parts of his published works. The anonymous "Anecdota Sydenhamia" is now known to have been written by Locke.

Egg Membrane in Symblepharon.—In the *Providence Med. Jour.* for January, the successful use of egg membrane for reuniting the raw surfaces resulting from operation for symblepharon, is reported. Under 4 per cent. cocain the adherent parts were separated with scissors and a catgut suture passed through the lower lid from without near the inner canthus and just above the conjunctival fold. This same suture was then passed from within out at the same level and near the outer canthus. Before it was drawn tight, a piece of egg membrane was placed under it. The suture was then drawn tight and tied outside. The eye was then bandaged and allowed to remain undisturbed for sixty hours as the patient had no pain or discomfort. On removing the bandage it was found that the suture had been absorbed but the piece of membrane was still in place. The following day it had worked out, but

the wound had healed with only a slight redness of the conjunctiva. Two days later the tendency toward entropion had almost disappeared and no reunion of the parts was apparent. The advantages of egg membrane for use in such cases are evident. It is very thin, yet quite tough; it is easily kept in place; it is worn with no discomfort to the patient; it is always easily obtained; and it is always absolutely sterile. A practical note in this connection is that the membrane is much easier to handle and cut if it is manipulated beneath a warmed normal salt solution."

Passage of Tuberculosis Toxin from Parents to Offspring.—Maffucci asserts that the toxin which exists in case of tuberculosis of the parents frequently passes to the offspring, either through the sperm, the ovum or the placenta. The offspring of tuberculous parents feel the maximum effect of this toxin, as manifested in deficient development, abortion or premature delivery, mortality or early cachexia. If the children survive they are endowed with greater resistance to the action of the tubercle bacillus than children of healthy parents. Chickens developed from infected eggs have a greater resistance to the virus than others raised from sound ones. Maffucci adds that his experiments have shown that offspring born with this tuberculous intoxication may throw it off and grow up healthy if removed from family contagion and placed in good hygienic surroundings. The *Gazzetta degli Osp.*, Nov. 19, 1899, contains his report to the Italian Congress of Surgery, on the subject.

Medicine a Public Service.—In a recent discussion at the Paris city council, A. Lefèvre stated that 60 per cent. of all the women who are confined in Paris demand admission to the maternities or the services of a physician connected with them, and 52 per cent. get what they ask. He continued: "The hospital abuse is constantly assuming larger proportions. It is no use to close our eyes to the tendency. The day is approaching when medicine will become an actual public service, like the city water-supply." An editorial in the *Progrès Méd.* admits the truth of these statements, and adds that the administration imposes many duties on the medical corps even now, for which remuneration should be allowed. Many practitioners, it concludes, would be rather glad than otherwise to witness the transformation of the practice of medicine into a public service, if a reasonable compensation for their services relieved them from their "misère en redingote" and opened a prospect for the future.

Straw Charcoal as a Dressing for Wounds.—THE JOURNAL has described the charcoal made from straw, which the Japanese use for dressings (xxvi, 1095 and 1195 and xxvii, 771). Its advantages are its perfect sterilization, its inexpensiveness, and its being so easily procured. Fevrier writes to the *Arch. de Med. Milit.*, August, 1899, that he has been testing it extensively, and finds that the expense, including the gauze bags in which it is applied, is trifling. The filled bags are extremely absorbent, and clean wounds, especially after operations, heal faultlessly under them. The results with suppurating or septic wounds correspond to those of other antiseptic dressings. In this case the straw is moistened with sublimate and the black mess that forms on the wound, from the charred straw and the secretions, is not particularly agreeable, but the wet bags are very absorbent, taking up their own weight in fluids, and the patients accepted these dressings without question. Wheat straw is best, and the richer in silicic acid the better it retains the shape. The straws should all be about the same length and laid parallel, and charred in an air-tight, sheet-iron vessel, requiring about forty-five minutes. Fevrier recommends it, therefore, as a very reliable and suitable material for dressing wounds, on the whole.

The Profession at the Dawn of the Twentieth Century.—An editorial in the *Münch. Med. Woch.*, commenting on the newly inaugurated "medical tribunals of honor" mentioned in THE JOURNAL (xxxiii, p. 114), observes that the physicians of Germany are now amply provided with means to protect the honor of the profession against lapses by individual members. "The rapid increase in the number of medical graduates attracted to the profession by the accident insurance legislation, etc., has possibly increased proportionately the number of the unscrupulous within its ranks, but this does not justify the assumption that the medical profession is in decadence. On the contrary, we believe that notwithstanding its difficult financial conditions, the profession never stood higher in public esteem than at the close of the nineteenth century. The best demonstration of this fact is the increased influence of medical advice in every domain of public life: in the courts, in the administration, in military and municipal affairs, in the schools, everywhere the physician's advice is becoming indispensable where until recently it was never thought of. To promote and develop this state of affairs is the task of the coming century. We can look back on the past with satisfaction and to the future with hope, confidently anticipating that closer organization and combination of the members of the profession will also improve their financial condition."

Blindness from Methyl Alcohol.—Apropos of Gifford's case of blindness from this source (see THE JOURNAL of Oct. 14, 1899, ¶ 47, p. 969) others are reported by Raub, in the *Ophthalmic Record* (December, 1899, p. 619), as follows: During the night of Oct. 4, 1898, a man drank from two to five teaspoonfuls of methyl alcohol. Vision was much impaired on the following morning and became gradually less until October 10, when he consulted an oculist. An examination showed no fundal changes. Vision, =0. Under treatment with strychnin and iodid of potassium, vision improved slightly up to October 26, and then gradually faded away as it had come. The present condition is complete optic nerve atrophy. He also refers to three men in the U. S. Navy, who, on July 4, 1898, drank a mixture of methyl alcohol and benzin, and were received on ambulance ship July 5, 1898. One was totally unconscious and died within a few hours; another was perfectly conscious and suffered from gastro-enteritis only; while the third was semiconscious; pupils widely dilated at first and remained so. On July 8 he regained consciousness, when it was discovered that he was totally blind. An examination by an oculist showed atrophy of both optic nerves. Under treatment with strychnin and iodid of potassium a slight improvement of vision was noted August 2. Subsequent reports do not record acuity of vision until Oct. 11, 1898, when total blindness was shown.

Thyroid Extract in Fractures.—In *Pediatrics* for January 15, an editorial writer points out that the fact that the administration of thyroid extract has some influence on the growth and development of bone in infantile myxedema, is well established. Among other beneficial results, a marked increase in stature is frequently observed. Some claim that in cases of retarded growth from other disorders, such as rickets, athrepsia and albuminuria, its administration will cause increase in the length of the long bones, provided ossification of the epiphyseal cartilages has not taken place. Hoffmeister showed, by means of the X-ray, that the changes in the bones of animals from which the thyroid gland has been removed are very similar to those which occur in the bones in infantile myxedema. They consist mainly in arrest of growth in the diaphyses and slow ossification of the epiphyses of the long bones. Considering these facts, some were led to watch the effect of removal of the thyroid gland in cases of fracture artificially produced in animals. They found that union was remarkably retarded in many instances. From such observations as those above cited, some hopeful therapeutists tried the effect of organo-therapy in delayed union of fractures, and have reported quite a number of cases apparently cured by this means alone after several of the usual methods had failed. Thus M. Potherat, at the meeting of La Société De Chirurgie, November, 1899, presented for a colleague a report of two cases treated successfully by this method. The first was a compound fracture of the leg which massage and immobilization in plaster failed to cure after twenty-four days. Under thyroid, consolidation took place in a few days. The second was a fracture of a rib which had not united after thirty-five days of the usual treatment. In ten days union was firm, but the patient died on the eleventh day, of cerebral hemorrhage. (See also, THE JOURNAL, xxxiii, p. 36.)

Success of Phototherapy.—The application of concentrated electric or sun light, excluding the heat rays, as practiced by Finsen on a large scale, is proving a success. O. Lassar, Berlin, has been investigating it on the spot, and returned enthusiastic. He intends to introduce it into his practice, and is urging the erection of a public, lupus phototherapeutic in-

stitute similar to the new tuberculosis polyclinic at Berlin. (*Derm. Ztft.*, December, 1899.) "All doubt in regard to the efficacy of the treatment vanishes at the first sight of the normal faces of the transformed lupus subjects." Finsen summoned a larger number of former patients to meet Lassar, and showed photographs and clinical notes before and during treatment. "Any one of the forty cases thus examined would guarantee the success of phototherapy." All were exceptionally extensive cases, and all had been cured with no more deformity than the disappearance of the pathologic neoformation necessarily entailed. "Lupus can be cured by Finsen's method; this much is certain." It is tedious and requires patience and perseverance, but it is very popular in Denmark. The institute was erected by private subscriptions on land donated by the city, which also partly pays for its maintenance. The national legislature has recently appropriated a quarter of a million to further the work. Special boarding-houses have had to be established for the number of lupus patients who flock to Copenhagen. The institution can treat a hundred a day. Each patient reclines and has a separate attendant to keep the concentrated light on the affected spot for two hours. Sunlight is more effective than the electric light. (Since first mentioned in THE JOURNAL, xxxi, p. 303, Finsen has modified his methods as described in xxxiii, p. 1037.)

Malta Fever in Manila, P. I.—Surgeon-General Sternberg has received a communication, dated Jan. 2, 1900, from Acting Assistant-Surgeon J. J. Curry, U. S. Army, assistant pathologist at the First Reserve Hospital, Manila, P. I., in which the probable existence of many cases of Malta fever among the troops is brought to the notice of the Department. Dr. Curry states that:

1. Some time ago Dr. Strong, the pathologist, performed an autopsy on a man who had died after a continued fever of long duration. Post-mortem examination was negative as to typhoid and malarial fevers. From the cultures of this case was obtained an organism identical with the coccus melitensis —the causative agent of Malta fever. This organism was inoculated into monkeys and produced the typical symptoms of Malta fever. Autopsy on the animals inoculated showed typical lesions with the development of the same coccus, which in turn produced the same disease in other animals. Dr. Strong in some manner inoculated himself during these investigations and now has Malta fever.

2. At a post-mortem examination on a case received from the Second Reserve Hospital, Dec. 27, 1899, a similar condition was met with as in Dr. Strong's case, i. e., no typhoid, malaria or other recognized pathologic condition. Cultures from this case showed the coccus melitensis.

3. A case of continued fever in the officers' ward of this hospital, whose blood was negative repeatedly to malaria and typhoid, gave the reaction with the melitensis.

4. A patient on the hospital ship *Relief*, whose blood gave negative results as above, also reacted with the melitensis.

As the result of the investigations of Dr. Strong, showing the first case to be one of undoubted Malta fever, the second case being also one of undoubted Malta fever and the positive results of the blood serum reaction of the third and fourth cases, we have evidence that Malta fever prevails here to a considerable extent. It is probable that many of those cases of continued fever which fail to react to Widal's test for typhoid, and which are negative to malaria, are cases of Malta fever. There are a number of such in the hospital at the present time, and no doubt the same is true of other hospitals. I will start at once the blood examinations for Malta fever on all such cases in this hospital. This will mean considerably more work in the laboratory department, which at the present time, owing to Dr. Strong's illness, is behind in its work. I would therefore respectfully suggest that a medical officer with at least some experience in laboratory work be detailed to assist.

Improved Font for Holy Water.—The danger from the use of a common communion cup has been dilated on not a little in the past, and in many churches individual cups have been substituted for the disease-breeding method still so commonly in use. Recently attention was called, in THE JOURNAL, to the danger lurking in the holy water contained in the fonts in the vestibules of the Catholic churches. The *Lancet* mentions the case of a little boy in Holland, who went with his father to church and soon after complained that something had gotten into his eye from the holy water. The eye developed such a serious condition in two days that the child was taken to Professor Snellen, of Utrecht, for treatment, under whose care he had to be kept for three months before recovery took place. The father of the boy, J. J. Bruns, at first doubted that the holy water had caused the trouble, but to be sure of it he had a large number of samples from different churches in Holland examined microscopically. The result was that in most cases an abundant bacterial growth was found, with occasional staphylococci and other pathogenic forms. Two guinea-pigs injected intraperitoneally with sediment from the holy water of a church in Amsterdam died in thirty hours from peritonitis, and two others injected subcutaneously with the same water suffered from local purulent inflammation at the point of injection. Mr. Bruns thereupon devised a container which promises, if it can be substituted for the old-fashioned font, to prevent future danger. This is a narrow-necked jar inverted in a shallow basin so that the outflow from the jar ceases as soon as the water in the basin covers the neck of the jar. One end of a bent tube filled with hair is immersed in the water in the basin and the other end, overhanging the edge, delivers a constant stream of small drops raised by the capillarity of the hair. All these parts are enclosed in an ornamental oaken case somewhat resembling that of a timepiece. This case projects from the wall, and the stream of drops falls through an opening in the bottom of the case into a receptacle which at once carries away the excess, and the congregation on entering the church have merely to hold their fingers in the stream for an instant. The apparatus was submitted to Monsigneur van de Wetering, Archbishop of Utrecht, who expressed his approval of it.

The Public Service.

A "DISTINGUISHED SERVICE" ORDER FROM THE WAR DEPARTMENT.

General Orders No 15 of Feb. 13, 1900, from the headquarters of the army announces the names of certain officers and enlisted men of the army and civilians engaged in military operations who distinguished themselves by specially meritorious acts or conduct in service on the dates and at the places specified. From the long list we have extracted the following relating to members of the medical department and hospital corps:

November, 1897.—Hospital Steward Ernst Grossjohann, Privates Harry Cook, James Q. Baber, hospital corps, U. S. Army; Jasper M. Lawrence and Garrett F. Hodnett, now out of service, then privates, hospital corps, U. S. Army, and the following named patients in hospital: Privates John E. Simpson, Frederick Williams, Leslie S. Caldwell, Howard S. Potter, Battery H, 1st U. S. Art.; Sergeant Robt. A. Pahren, Battery B, 6th U. S. Inf., and Private John J. McKenzie, U. S. hospital corps, then privates, Battery H, 1st U. S. Art., and Private John F. Tobin, Battery M, 3d U. S. Art., then private, Battery L, 1st U. S. Art. For meritorious conduct in voluntarily nursing yellow fever patients in hospital, Fort Barrancas, Fla., during the epidemic.

June 24 and July 1 to 3, 1898.—Dr. John Guitéras, now out of service, then acting assistant-surgeon, U. S. Army: For gallant and meritorious conduct in attending the sick and wounded on the field of battle at Las Guasimas and Santiago, Cuba.

June 24, 1898.—Dr. Jose M. Delgado, acting assistant-surgeon, U S. Army: For distinguished service, being constantly on the firing line, exposing himself in the most conspicuous manner to the fire of the enemy, in the care of the wounded, in the battle of Las Guasimas, Cuba.

June 30, 1898.—Dr. Maximilian Lund, then acting assistant-surgeon, U. S Army: For especially meritorious conduct attending the sick and wounded under fire, during the reconnoissance at Tayabacoa, Cuba, and subsequently in making extraordinary efforts to secure their embarkation on the transports.

July 1, 1898.—Capt. Thomas R. Marshall, assistant-surgeon 41st Inf., U. S. Vols., then acting assistant-surgeon, U S. Army: For gallant and meritorious conduct during the battle of Santiago, Cuba, where, under fire, he cared for the sick and wounded.

July 1, 1898.—Private Andrew Haring, hospital corps, U. S. Army: For distinguished service in battle, Santiago, Cuba. (Certificate of merit.)

July 1, 1898.—Dr. Thomas Y. Aby, now out of service, then acting assistant-surgeon, U. S. Army: For gallant conduct in attending the wounded on the battlefield and the sick in the trenches, while himself ill from fever and heat; this at the battle of Santiago, Cuba.

July 1, 1898.—Dr. Harry W. Danforth, deceased, then acting assistant-surgeon, U. S. Army: For especially meritorious service rendered during battle of Santiago, Cuba, in caring for the sick and wounded. He was killed while at work at the dressing station at the "Bloody Ford,"' on the morning of July 2.

July 1, 1898.—Dr. Francisco E. Menocal, now out of service, then acting assistant-surgeon, U. S. Army: For gallant and meritorious conduct during the battle of Santiago, Cuba, where, under fire, he cared for the sick and wounded.

July, 1898.—Major Frederick J. Combe, brigade surgeon, U S. Vols., then acting assistant-surgeon U. S. Army: For especially meritorious service during the Santiago campaign, in establishing, with the aid of others, the division hospital at the extreme front, carrying a portion of the supplies for several miles on his back during drenching rains and in deep mud.

July, 1898.—Drs. Hamilton P Jones and William W. Calhoun, acting assistant-surgeons, U S. Army: For especially meritorious

service during the Santiago campaign, in establishing with the aid of others, the division hospital at the extreme front, carrying a large portion of the supplies for several miles on their backs during drenching rains and in deep mud.

July, 1898.—Dr. G. Goodfellow, civilian and volunteer aid to Gen. Wm R. Shafter: For especially meritorious services, professional and military, during the campaign in Cuba.

July and August, 1898.—Dr. Nicholas Senn, now out of service, then lieutenant colonel and chief surgeon, U. S. Vols.: For his surgical work during the Cuban campaign, and for making a scientific study into the causes of typhoid fever among the troops.

August 13, 1898.—Major Frank H. Titus, U. S. Vol. staff, then acting assistant-surgeon, U. S. Army: For establishing a first aid hospital in the village church, and for the manner in which he came to the front with a detachment of the hospital corps through a heavy indirect fire, and the efficient manner in which he rendered services to the wounded at the battle of Manila, Philippine Islands.

August, 1898.—Col. Charles R. Greenleaf, assistant-surgeon, U. S. Army: For most efficient and hazardous service in the medical department in Cuba and during the Puerto Rican campaign, especially in the yellow fever camps.

October 5, 1898.—Acting Hospital-Steward Oscar Burkard, then private U. S. hospital corps: For distinguished bravery in action against hostile Indians at Leech Lake, Minn. (Medal of honor.)

June 14, 1899.—Private Harry Shields, hospital corps, U. S. Army: For distinguished conduct in the flood at Brackettsville, Texas. (Certificate of merit.)

ARMY CHANGES.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D C., Feb. 2 to 8, 1900, inclusive:

George W. Adair, major and surgeon, U S. Army, member of a retiring board convened at Chicago, Ill.

Robert A. Anderson, acting asst.-surgeon, from Coldwater, Miss., to San Francisco, Cal., to accompany troops to the Philippine Islands.

Ira Ayer, acting asst.-surgeon, previous orders amended so as to relieve him from duty on the transport *Wright;* he will proceed at once on the transport *McClellan* from Santiago, Cuba, to New York City, N. Y.

Joseph L. Bell, lieutenant and asst.-surgeon, 34th U. S. Infantry Volunteers, honorably discharged on tender of his resignation to take effect Feb. 5, 1900.

Frederick J. Combe, major and surgeon, Vols., from duty as medical supply officer at Santiago, Cuba, to New York City, N. Y., reporting by telegraph to the Adjutant-General of the Army for further orders.

Edward T. Comegys, major and surgeon, U. S. Army, member of a retiring board convened at Sullivan's Island, S. C.

Carl R. Darnall, lieutenant and asst.-surgeon, U. S. Army, from the division of Cuba to New York City, N. Y., to accompany recruits on the transport *Sumner* to Manila, P. I., where he will report for assignment in the Department of the Pacific and 8th Army Corps.

William O. Davies, acting asst.-surgeon, from Fort DuChesne, Utah, to San Francisco, Cal., to accompany troops to the Philippine Islands.

Albert Hartsuff, lieutenant-colonel, deputy surgeon-general, U. S. Army, member of a retiring board at Chicago, Ill.

Meyer Herman, acting asst.-surgeon, from Hammond, La., to San Francisco, Cal., to accompany troops to the Philippine Islands.

Aubray F. Higgins, acting asst.-surgeon, from Jefferson Barracks, Mo., to San Francisco, Cal., for an assignment to duty at the general hospital, Presidio of San Francisco.

Francis A. Holliday, acting asst.-surgeon, member of a retiring board at Sullivan's Island, S. C.

Evan H. Howell, acting asst.-surgeon, from San Francisco, Cal., to duty at Fort DuChesne, Utah.

James H. Hyssell, major and surgeon, Vols., from the Department of Mantanzos and Santa Clara to Santiago, Cuba, as medical supply officer.

John P. Kelly, acting asst.-surgeon, from New York City, N. Y., to San Francisco, Cal., for duty on a government transport.

Jesse W. Lazear, acting asst.-surgeon, from Baltimore, Md., to Tampa, Fla., reporting by telegraph for further orders; to Havana, Cuba, for assignment at Columbia Barracks.

John H. Macready, acting asst.-surgeon, from the general hospital, Presidio of San Francisco, Cal., to Fort Thomas, Ky., for annulment of contract.

George C. Means, acting asst.-surgeon, from the Department of Santiago and Puerto Principe to San Francisco, Cal., to duty with troops going to the Philippine Islands.

Gordon E. Meldrum, acting asst.-surgeon, from Washington, D. C., to San Francisco, Cal., for duty with troops going to the Philippine Islands.

Curtis E. Munn, major and surgeon, U. S. Army, retired from active service, Feb. 2, 1900.

Edwin C. Shattuck, acting asst.-surgeon, from Fort Pickens, Fla., to San Francisco, Cal., for duty with troops going to the Philippine Islands.

Bat Smith, acting asst.-surgeon, to duty in the Department of Santiago and Puerto Principe, Cuba.

Edward A. Southall, acting asst.-surgeon, from Geneseo, N. Y., to San Francisco, Cal., to duty at the general hospital, Presidio of San Francisco.

NAVY CHANGES.

Changes in the Medical Corps of the U. S. Navy for the week ending Feb. 10, 1900:

P. A. Surgeon M. S Elliott, commissioned passed assistant-surgeon from October 6, 1899.

Medical Director J. A. Hawke, commissioned medical director from September 24, 1899.

Medical Director R. A. Marmion, commissioned medical director from October 25, 1899.

Medical Director D. Dickinson, commissioned medical director from November 11, 1899.

Medical Director M. C. Drennan, commissioned medical director from Feb. 5, 1900.

Medical Inspector T. H. Streets, commissioned medical inspector from April 16, 1899.

Medical Inspector G. H. E. Harmon, commissioned medical inspector from November 11, 1899.

Medical Inspector J. W. Waggener, commissioned medical inspector from Feb. 8, 1899.

Surgeon T. A. Berryhill, commissioned surgeon from April 16, 1899.

Surgeon E. P. Stone, commissioned surgeon from April 16, 1899.

P. A. Surgeon R. K. Smith, commissioned passed assistant-surgeon from April 3, 1899.

P. A. Surgeon R. S. Blakeman, commissioned passed assistant-surgeon from May 27, 1899.

P. A. Surgeon J. C. Rosenbleuth, commissioned passed assistant-surgeon from Oct. 14, 1899.

P. A. Surgeon G. W. Costigan, commissioned passed assistant-surgeon from Feb. 8, 1900.

P. A. Surgeon G. H. Barber, detached from the Naval Academy, and ordered home and to be ready for orders to sea duty.

MARINE-HOSPITAL CHANGES.

Official list of the changes of station and duties of commissioned an non-commissioned officers of the U. S Marine-Hospital Service for the seven days ending Feb. 8, 1900.

Surgeon Eugene Wasdin, on expiration of leave of absence to proceed to New York, N. Y., for orders.

Passed Asst.-Surgeon C. P. Wertenbaker, to proceed to Martinsville, Va., for special temporary duty.

Asst.-Surgeon J. W. Amesse, to proceed to Cleveland, Ohio, for temporary duty during the absence of Surgeon T. J. Pettus.

Hospital Steward R. H. Gibson, relieved from duty at South Atlantic quarantine station, and directed to proceed to Gulf quarantine station, Mississippi, for duty and assignment to quarters.

Hospital Steward T. V. O'Gorman, relieved from duty at Gulf quarantine station, and directed to proceed to Louisville, Ky., for duty and assignment to quarters.

Hospital Steward M. McKay, granted leave of absence for five days from January 29.

Hospital Steward N. C. Comfort, to report at Washington, D. C., for special temporary duty; to proceed to Manila, Philippine Islands and report to Passed Asst.-Surgeon J. C. Perry, Chief Quarantine Officer, for duty.

HEALTH REPORTS.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 16, 1900:

SMALLPOX—UNITED STATES.

Alabama, Mobile, Feb. 2-10, 5 cases.
Florida, Jacksonville, Feb. 2-10, 1 case.
Georgia, Brunswick, Feb. 5, 46 cases.
Indiana, Evansville, Feb. 2-10, 8 cases.
Kentucky, Atchison, Jan. 27-Feb. 10, 9 cases; Mound Valley, Nov. 5-Feb. 5, 6 cases.
Louisiana, New Orleans, Feb. 3-10, 89 cases, 7 deaths; Shreveport, Feb. 3-10, 12 cases, 4 deaths.
Mississippi, St. Louis, Jan. 22-Feb. 3, 13 cases.
Ohio, Cincinnati, Feb. 2-9, 1 case; Cleveland, Feb. 3-10, 30 cases; Youngstown, Feb. 3-10, 1 case.
South Carolina, Greenville, Feb. 3-10, 2 cases.
Tennessee, Nashville, Feb. 3-10, 8 cases.
Utah, Salt Lake City, Feb. 3-10, 2 cases.
Virginia, Portsmouth, Feb. 3-10, 10 cases.

SMALLPOX—FOREIGN.

Austria, Prague, Jan. 13-20, 4 cases.
Belgium, Antwerp, Jan. 13-27, 11 cases, 7 deaths; Ghent, Jan 27-Feb. 3, 1 death.
China, Hongkong, Dec. 16-23, 1 case, 1 death.
Colombia, Barranquilla, Jan. 22-27, 1 case, 1 death.
England, Leeds, Jan. 27-Feb. 3, 1 case; Liverpool, Jan. 22-27, 1 case; London, Feb. 22-27, 24 cases; Southampton, Jan. 13-27, 2 cases.
France, Paris, Jan. 22-27, 1 death.
Germany, Konigsberg, Jan. 13-20, 1 death.
Greece, Athens, Jan. 22-27, 3 cases, 1 death.
India, Bombay, Jan. 2-16, 96 deaths; Bombay, Jan. 9-16, 143 deaths; Calcutta, Dec. 22-Jan. 6, 13 deaths.
Japan, Formosa, Tamsui, Oct. 1-31, 6 cases.
Mexico, Chihuahua, Jan. 27-Feb. 3, 6 deaths; Mexico, Dec. 24-Jan. 28, 60 cases, 41 deaths; Vera Cruz, Jan. 27-Feb. 3, 1 death.
Russia, Moscow, Jan. 13-20, 2 cases; Odessa, Jan. 13-27, 26 cases; St. Petersburg, Jan. 13-20, 21 cases, 5 deaths; Warsaw, Jan. 13-20, 4 deaths.
Spain, Corunna, Jan. 22-27, 1 case, 1 death; Madrid, Jan. 20-27, 13 deaths.
Turkey, Smyrna, Jan. 7-21, 3 deaths.
Straits Settlements, Singapore, Dec. 13-30, 2 deaths.
Switzerland, Geneva, Jan. 6-13, 1 case.

YELLOW FEVER—FOREIGN.

Cuba, Havana, Jan. 31-Feb. 6, 1 case, 2 deaths.

CHOLERA.

India, Bombay, Jan. 2-16, 7 deaths; Calcutta, Dec. 22-Jan. 6, 34 deaths.

PLAGUE—U. S. INSULAR POSSESSIONS.

Hawaii, Honolulu, Dec. 12, 1899-Jan. 23, 1900, 52 cases, 41 deaths.

PLAGUE—FOREIGN.

China, Hongkong, Dec. 8-23, 5 cases, 5 deaths.
India, Bombay, Jan. 2-16, 752 deaths; Calcutta, Dec. 22-Jan. 6, 97 deaths; Kurrachee, Jan. 1-14, 13 cases, 8 deaths.
Japan, Formosa, Oct. 1-Nov. 30, 48 cases, 27 deaths; Kobe, Nov. 11-31, 9 cases, 7 deaths; Kobe, Dec. 23, 12 cases, 9 deaths; Osaka, to Jan. 7, 41 cases, 38 deaths.

CHANGE OF ADDRESS.

L. C. Stitely, from Baltimore to Westminster, Md.
Kate Lindsey, from Clearmont, Cape Colony, South Africa, to Battle Creek Sanitarium, Battle Creek, Mich.
M. H. Verpoorten, from Laramie, Wyo., to 2707 S 13th St., Omaha, Neb.
M. McMurty, from Purcell, I. T., to Oklahoma City, O. T.
P. E. McDonald, from Washington, D. C., to Grand River Boarding School, Fort Yates, N. D.
A. P. Grear, from Murphysboro, to Sandusky, Ill.,
J. S. Mason, from Penfield to Rantoul, Ill.